

Supplementary Information of

“ Mapping zygote-to-adult developmental cell phylogeny in *Arabidopsis thaliana* reveals
a 3-cell rule of branching”

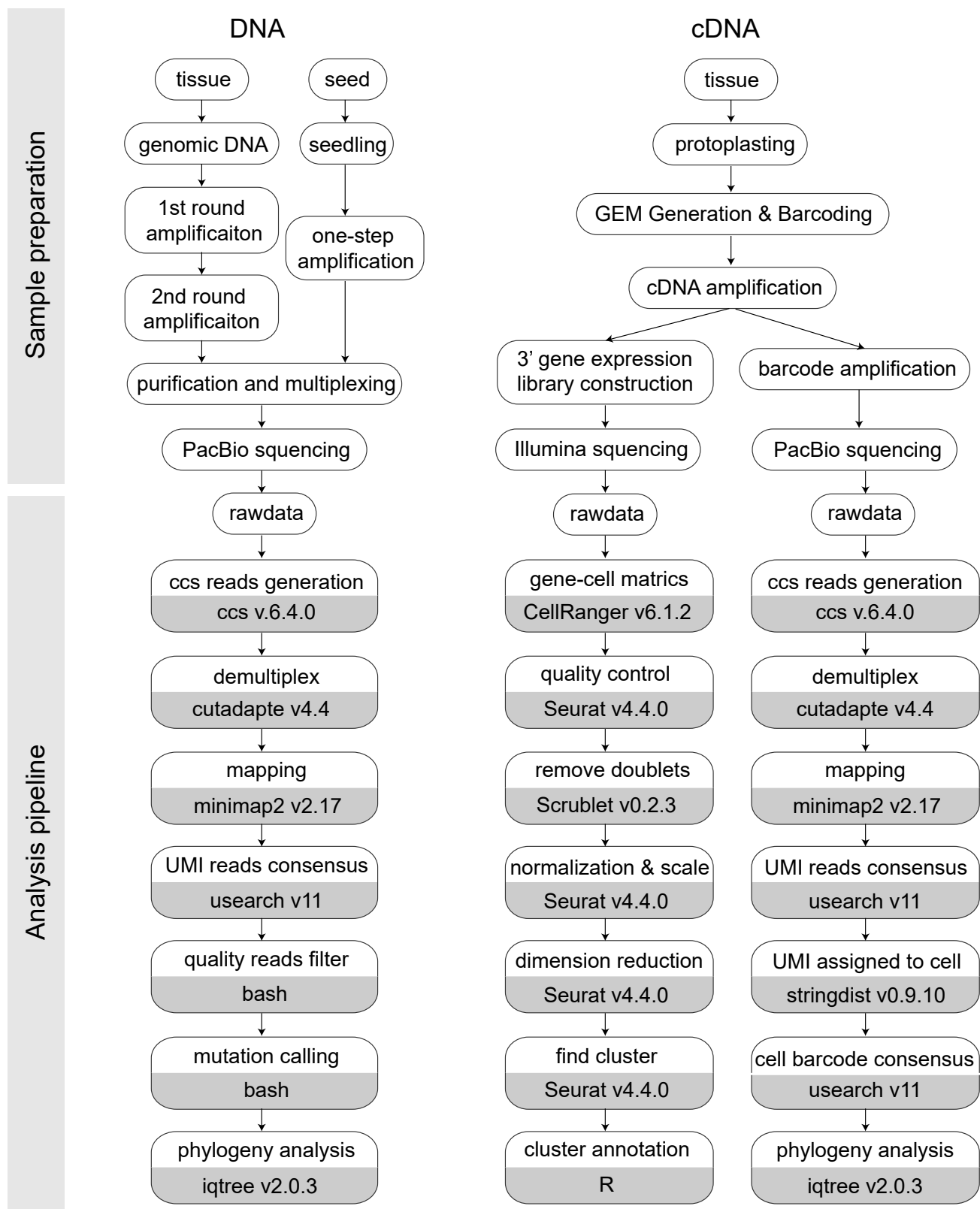
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Supplementary Fig. 1 | Workflow for sample preparation and analysis pipeline.

Supplementary Note 1 | Functional annotation of 25 cell clusters.

The epidermis population contains 5 clusters (Fig. 4b-4c), characterized by the expression of *LIPID TRANSFER PROTEIN (LTP)* genes, *FIDDLEHEAD (FDH)*, *MERISTEM LAYER1 (ATML1)*, *PRO-TODERMAL FACTOR1 (PDF1)*, *GLYCEROL-3-PHOSPHATE SN-2-ACYLTRANSFERASE 3 (ATGPAT3)*. Notably, epidermal cells derived from leaves predominantly cluster in Cluster 8, whereas flower-derived epidermal cells are primarily found in the other 4 clusters (Extended Data Fig. 5d-5f). This distribution indicates specialized epidermal features between leaf and floral whorls. Furthermore, Cluster 17 and Cluster 23, featured by *FAMA*, *STOMATAL CARPENTER 1 (SCAP1)*, *THIOGLUCOSIDE GLUCOHYDROLASE 1 (TGG1)*, were identified as guard cells and also classified to the EP population (Fig. 4b-4c and Extended Data Fig. 6).

The vascular cell population (VC) was characterized by the expression of vascular tissue-specific markers such as *DNA BINDING WITH ONE FINGER 4.1 (DOF4.1)*, *DOF2.4*, *INDOLE-3-ACETIC ACID INDUCIBLE 27 (IAA27)*, *BASIC LEUCINE ZIPPER 9 (BZIP9)*. Three specialized vascular cell type: companion cell (CC, Cluster 18), sieve element (SE, Cluster 22), tracheary element (TE, Cluster 24) were also identified based on their characteristic markers (Fig. 4b-4c and Extended Data Fig. 6). Notably, flower-derived vascular cells and leaf-derived vascular cells cluster homogenously in UMAP (Extended Data Fig. 5d-5f), underlining the specialized and conserved function of vascular cells across different plant organs.

Four clusters (Cluster 0, 3, 7, 20), predominantly expressing photosynthesis- or chloroplast-related genes, were identified as MC population (Fig. 4b-4c). Among them, Cluster 7 is primarily composed of flower-derived cells (Extended Data Fig. 5e) and likely represents mesophyll cells from the sepal. Additionally, a fraction of cells in Cluster 4 exhibits moderate expression of MC-marker genes (Extended Data Fig. 6c), suggesting their origin is likely to be the carpel in flowers. Notably, a small cluster (Cluster 21) forms a distinct trajectory extending from Cluster 4 (Extended Data Fig.

5f) and displays specialized expression of genes related to stigmatic tissue or anther development (Extended Data Fig. 6c). Interestingly, Cluster 19, which also forms a separate trajectory in the UMAP (Extended Data Fig. 5f), exhibits a coordinated expression pattern with Cluster 21, featuring genes related to anther and carpel development (Extended Data Fig. 6c). Therefore, Cluster 19 and Cluster 21 may represent two highly specialized cell types that collaboratively contribute to the development of anthers and carpels.

Furthermore, we found that meristem marker genes, such as *WUSCHEL RELATED HOMEBOX 4 (WOX4)*, *LEAFY 3 (LFY)*, *SHOOT MERISTEMLESS (STM)*, and other *KNOLLE (KN)* transcription factor family genes, are predominantly expressed in Cluster 4, 6, and 12 (Extended Data Fig. 6). However, since we collected Stage 11-12 flowers for single cell analysis, the floral meristem has nearly completed differentiation and is often undetectable at this stage. Notably, researchers have described that the pedicel may retain some characteristics of the floral meristem after flower maturation¹. Correspondingly, the developmental trajectory, based on pseudotime estimation, depicts that Cluster 4 (possibly carpel cells) and Cluster 6 (vascular cells) diverge from Cluster 12 (Extended Data Fig. 5f). We hypothesize that cells in Cluster 12 likely represent the residual floral meristem cells retained in the pedicel, which are undergoing differentiation toward carpel cells or vascular cells. However, loss of spatial information prevented us from assigning each cluster to specific floral whorls. Therefore, we simply classified the remaining clusters as “other cells”.

1. Alvarez-Buylla, E. R. *et al.* Flower Development. *Arab. B.* **8**, e0127 (2010)
<https://doi.org/10.1199/tab.0127>.

Supplementary Note 2

Robustness analysis in parameter space of β , μ and P_{cell}

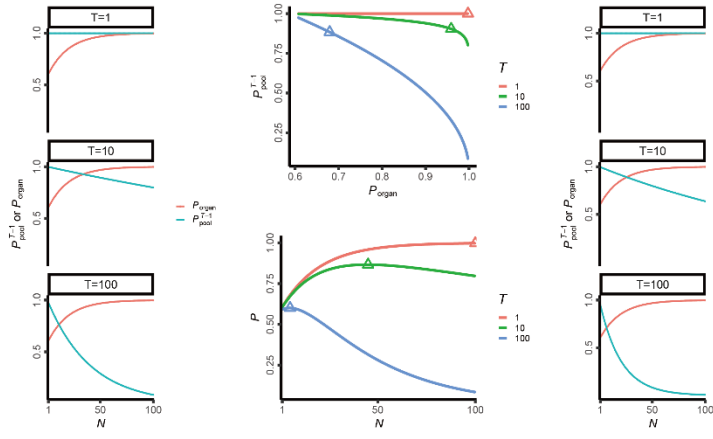
Summary: In the following analyses, we explore a wide range of values for each of the three parameters (β , μ , and P_{cell}) to demonstrate the relationships between P , P_{organ} , P_{pool} , and N under different levels of T (1, 10, 100). In each section, we vary one parameter while keeping the other parameters constant at the values used in the main text ($\beta = 0.005$, $\mu = 0.5$, and $P_{\text{cell}} = 0.1$). The discoveries in the main text are robust to these three parameters.

Section 1: $\beta \sim [0.0005, 0.001, 0.003, 0.005, 0.007, 0.009, 0.01, 0.015, 0.02, 0.03, 0.04, 0.05]$

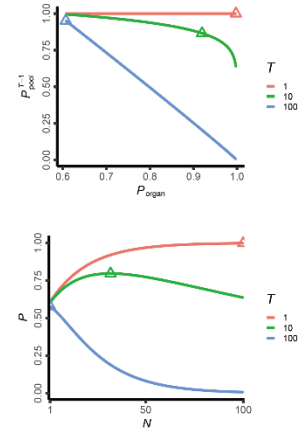
Description:

1. P_{organ} and P_{pool} exhibit the same pattern as demonstrated in the main text.
2. The optimal N remains the maximum for different β values when $T = 1$.
3. The optimal N increases with decreasing β and decreases with increasing β , generally stabilizing at a lower level when $T = 10$.
4. The optimal N equals 1 in most situations and remains at a lower level when β is extremely low, under $T = 100$.
5. In all situations, the optimal N under $T = 100$ approximates 1 and is no larger than that under $T = 10$.

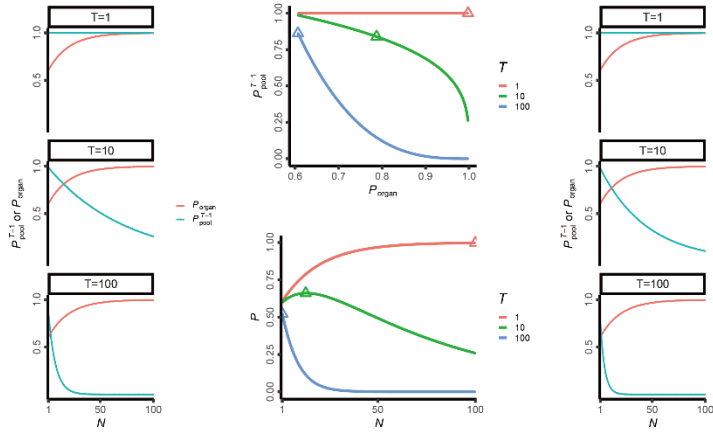
$\beta = 5e-04$



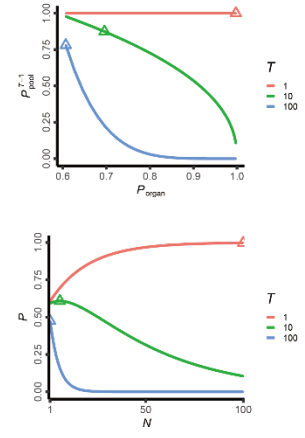
$\beta = 0.001$



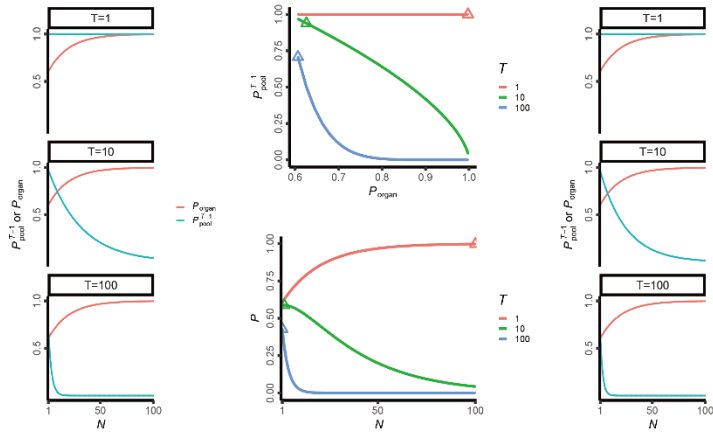
$\beta = 0.003$



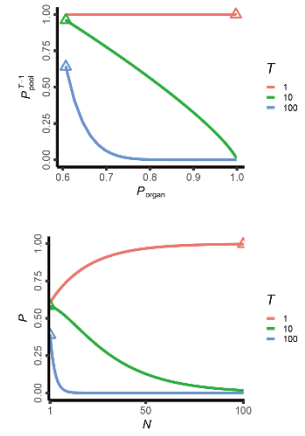
$\beta = 0.005$

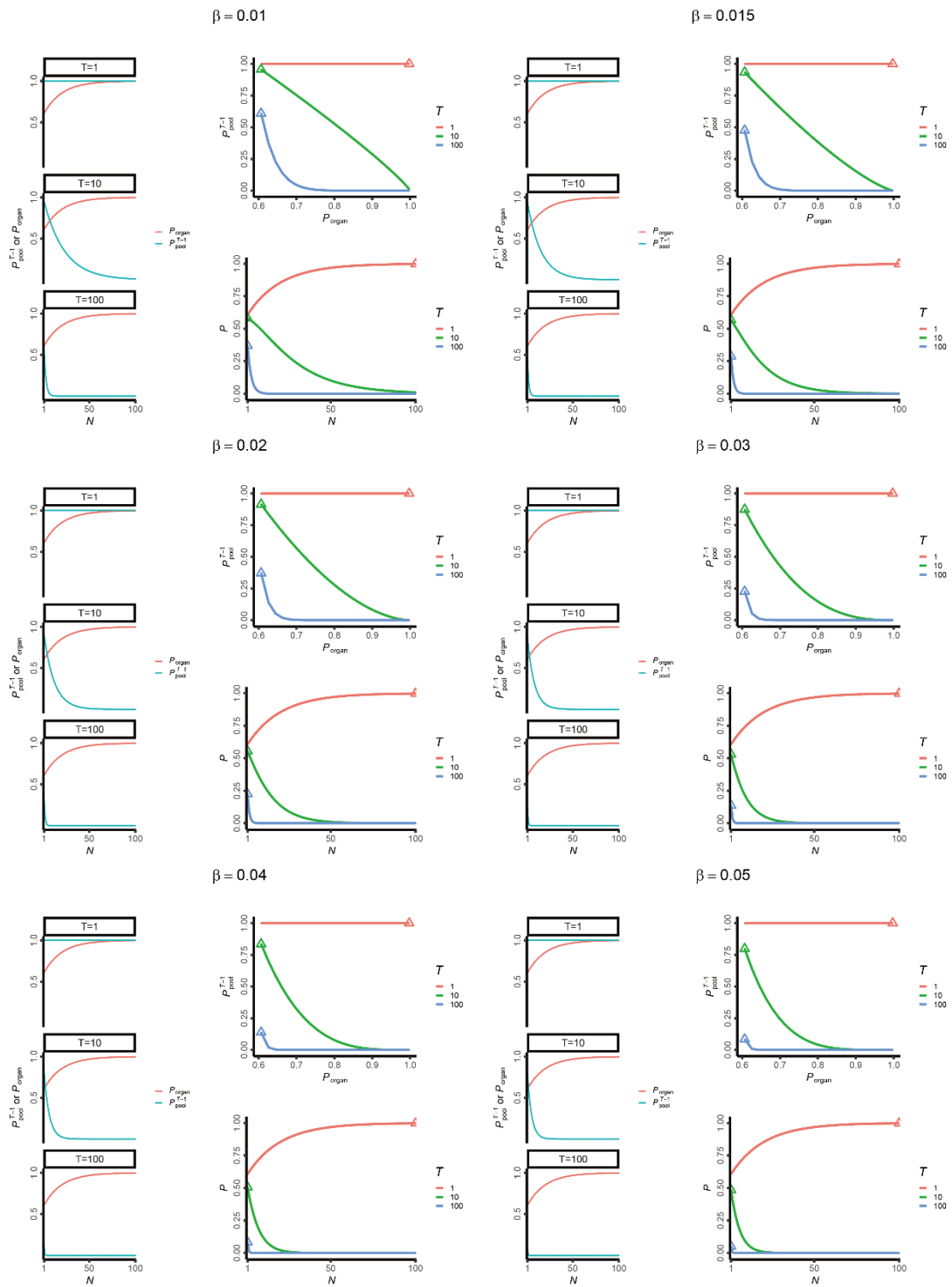


$\beta = 0.007$



$\beta = 0.009$

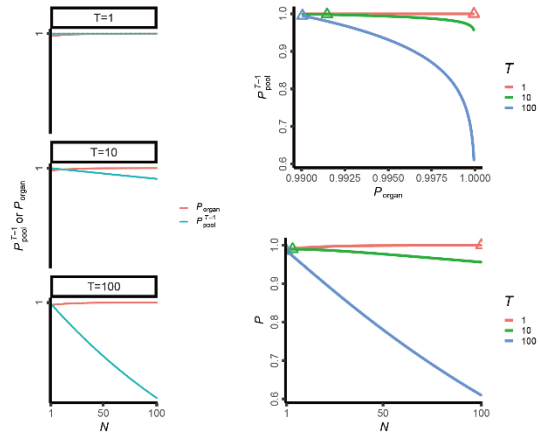
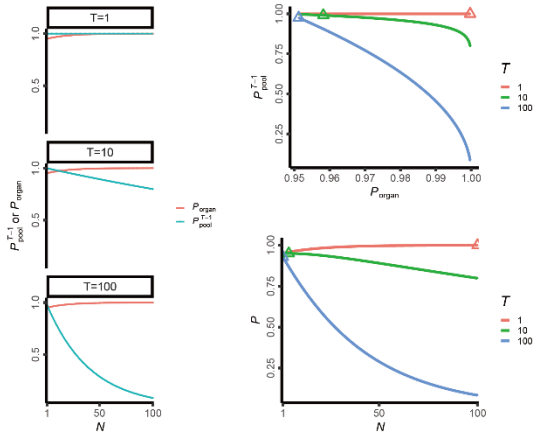
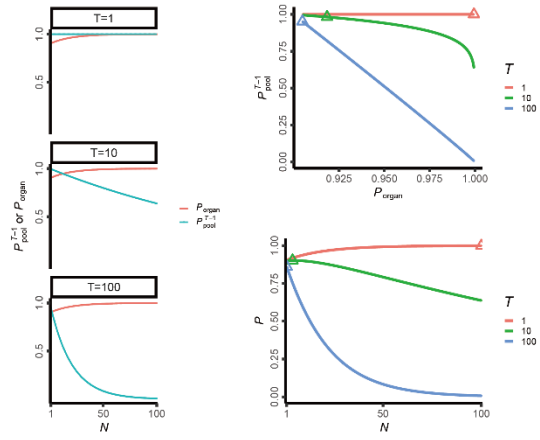
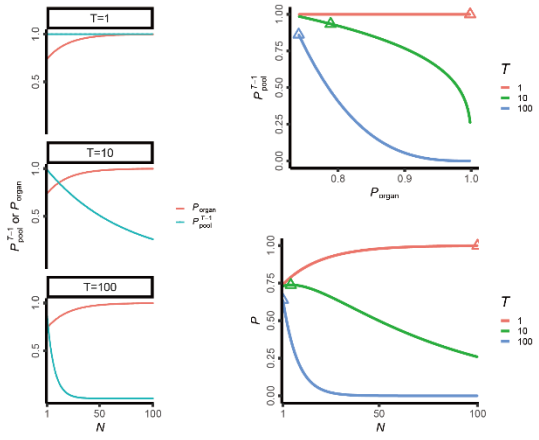
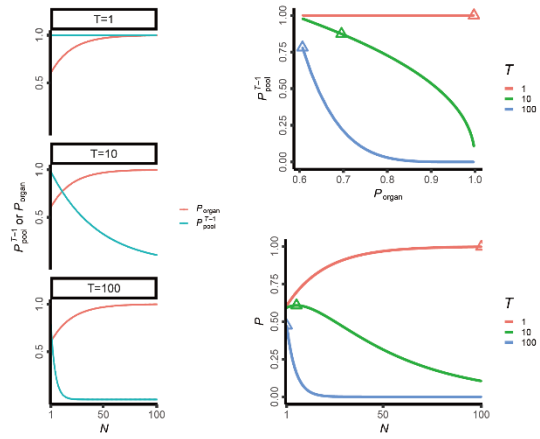
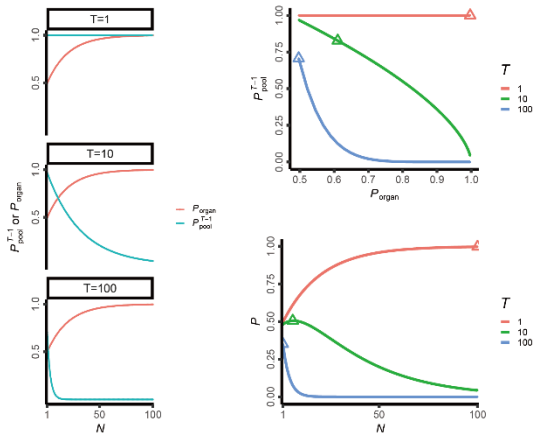




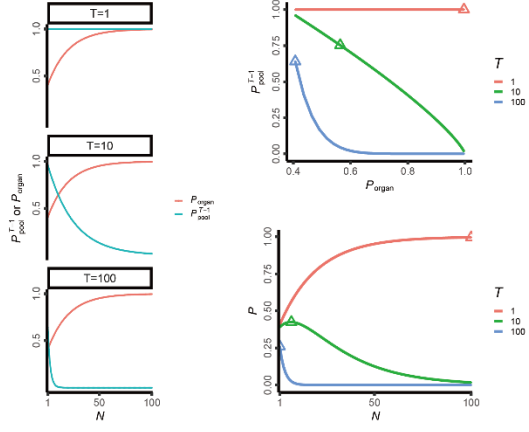
Section 2: $\mu \sim [0.01, 0.05, 0.1, 0.3, 0.5, 0.7, 0.9, 1, 2, 5]$

Description:

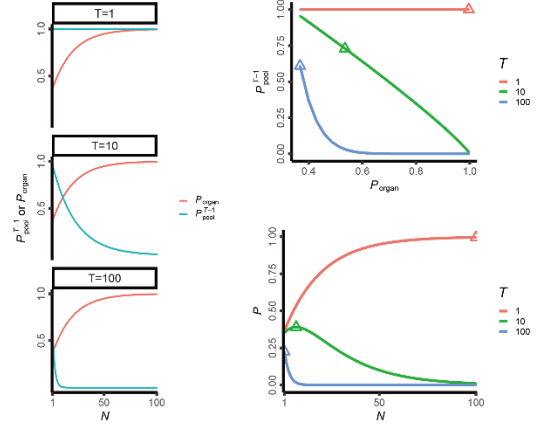
1. P_{organ} and P_{pool} exhibit the same pattern as demonstrated in the main text.
2. The optimal N remains the maximum for different μ values when $T = 1$.
3. The optimal N remains at a lower level and equals to 1 when μ is extremely low, when $T = 10$.
4. The optimal N equals 1 in most situations and keep at a lower level when μ is extremely low, under $T = 100$.
5. In all situations, the optimal N under $T = 100$ approximates 1 and is no larger than that under $T = 10$.

$\mu = 0.01$  $\mu = 0.05$  $\mu = 0.1$  $\mu = 0.3$  $\mu = 0.5$  $\mu = 0.7$ 

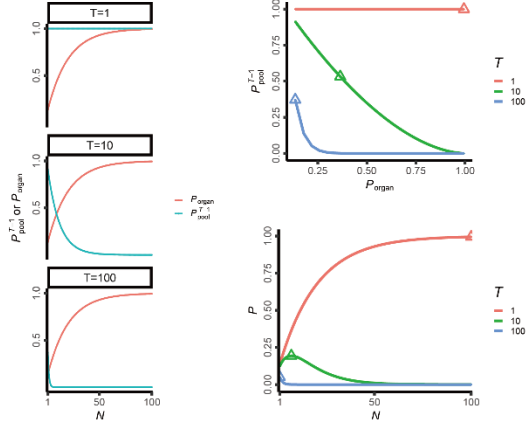
$\mu = 0.9$



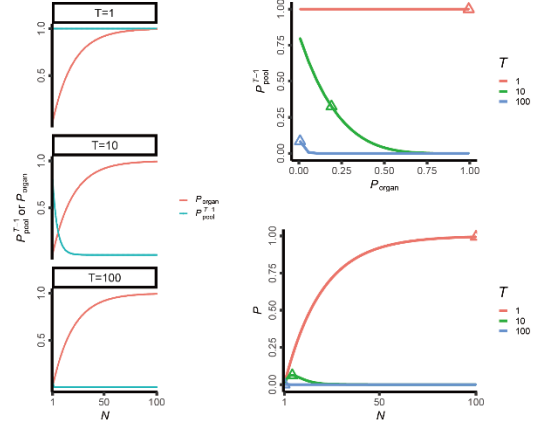
$\mu = 1$



$\mu = 2$



$\mu = 5$

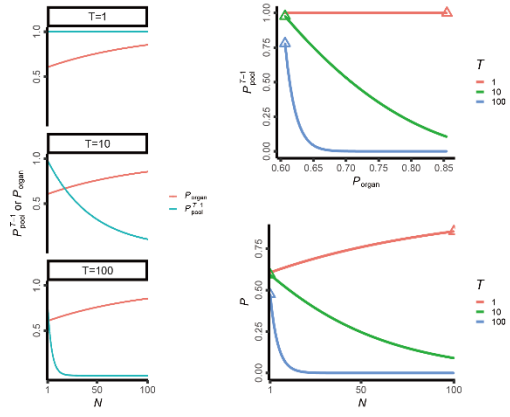


Section 3: $P_{\text{cell}} \sim [0.01, 0.03, 0.05, 0.07, 0.09, 0.1, 0.15, 0.2, 0.3, 0.4, 0.5]$

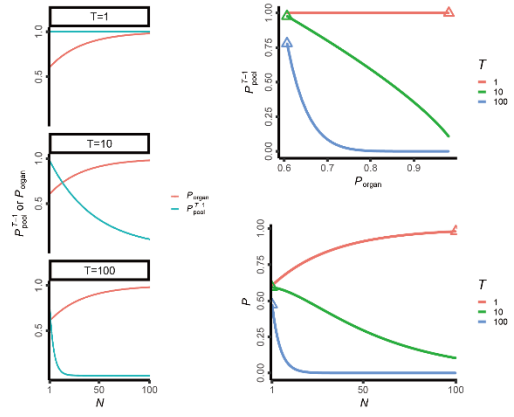
Description:

1. P_{organ} and P_{pool} exhibit the same pattern as demonstrated in the main text.
2. The optimal N remains the maximum for different P_{cell} values when $T = 1$.
3. The optimal N remains a lower level for most situations and equals to 1 when P_{cell} is very low, under $T = 10$.
4. The optimal N equals 1 in all situations when $T = 100$.
5. In all situations, the optimal N under $T = 100$ approximates 1 and is no larger than that under $T = 10$.

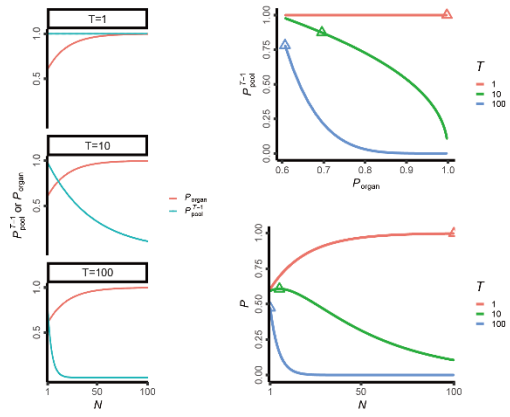
Pcell = 0.01



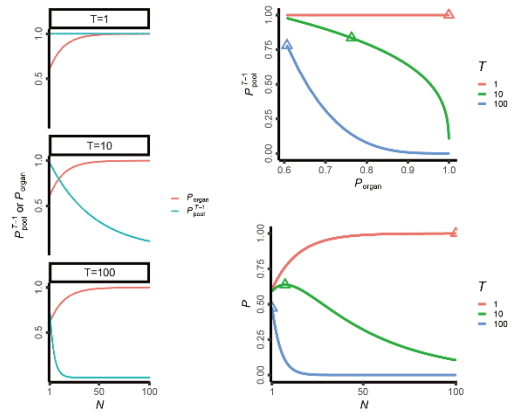
Pcell = 0.03



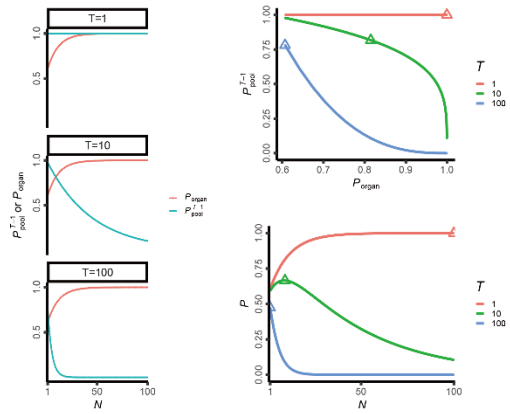
Pcell = 0.05



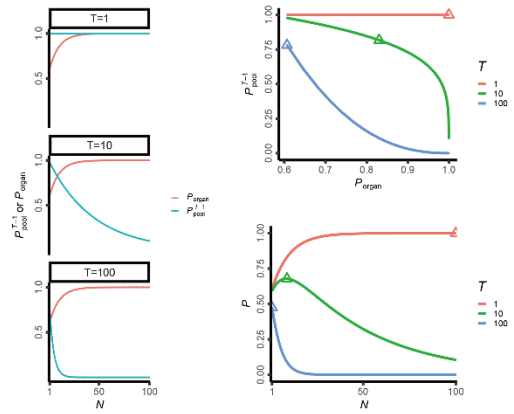
Pcell = 0.07



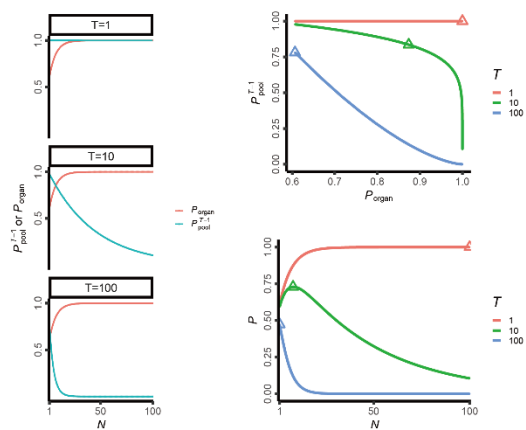
Pcell = 0.09



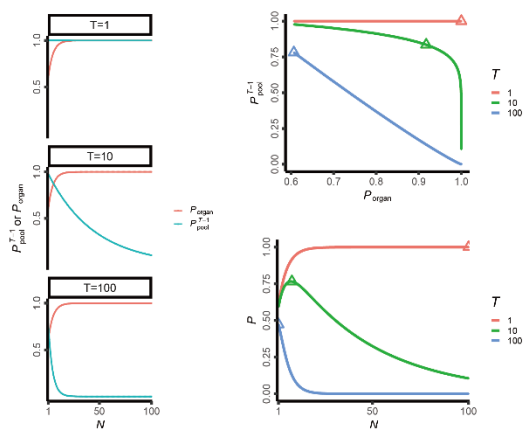
Pcell = 0.1



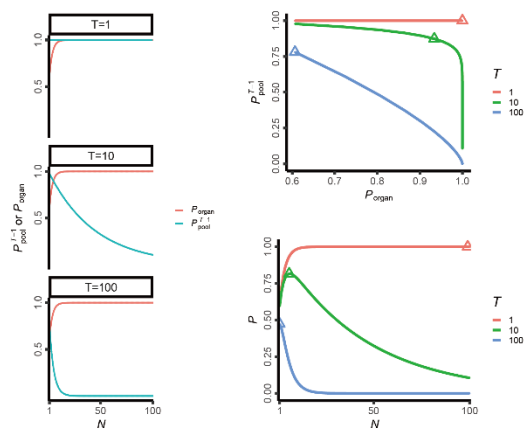
Pcell = 0.15



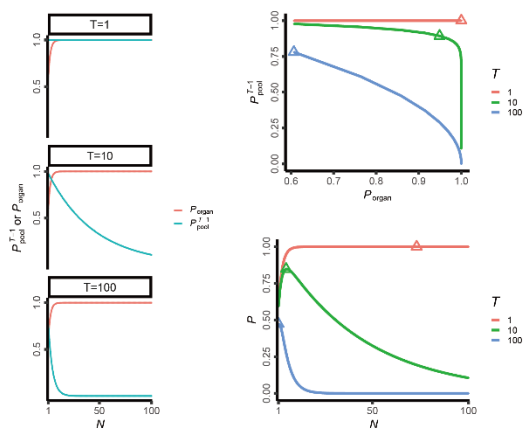
Pcell = 0.2



Pcell = 0.3



Pcell = 0.4



Pcell = 0.5

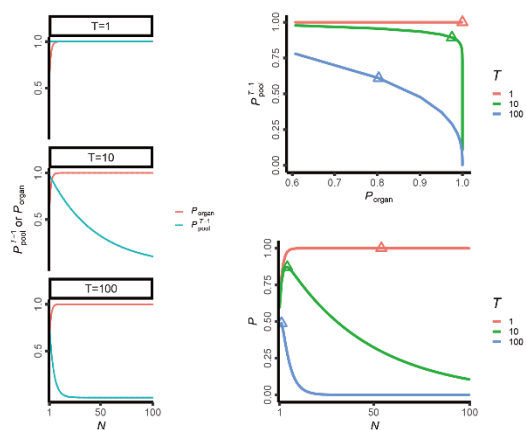


Table S1 | Overview of evolving cellular barcoding methods.

Evolving cellular barcoding (Publication)	Species	Mutation types	Mutation number per barcode	Coupled with scRNA-seq	Phylogeny type	Bootstrap support (median)
GESTALT (McKenne et al. 2016, Science)	Zebrafish	Indels	2.86	No	Cell phylogeny	No
Polylox (Pei et al. 2017, Nature)	Mouse	Recombination	2.67	No	Cell phylogeny	No
ScarTrace (Alemany et al. 2018, Nature)	Zebrafish	Indels	2.95	Yes	Tissue phylogeny	Yes (53%)
LINNEAUS (Spanjaard et al. 2018, Nat. Biotechnol.)	Zebrafish	Indels	3.1	Yes	Tissue phylogeny	No
Homing CRISPR (Kalhor et al. 2018, Science)	Mouse	Indels	5.93	No	Organ phylogeny	No
Molecular recorder (Chan et al. 2019, Nature)	Mouse	Indels	2.61	Yes	Cell phylogeny	No
CRISPR recorder (Salvador-Martínez et al. 2019, eLife)	Fly	Indels	~1	No	Cell phylogeny	No
CARLIN (Bowling et al. 2020, Cell)	Mouse	Indels	~3	Yes	Cell phylogeny	No
SMALT (Liu et al. 2021, Nat. Methods)	Fly	Substitutions	21.3	No	Cell phylogeny	Yes (93%)
DARLIN (Li et al. 2023, Cell)	Mouse	Insertions	~2	Yes	Cell phylogeny	No
e-SMALT (This study)	Arabidopsis	Substitutions	~50	Yes	Cell phylogeny	Yes(96%)

Table S2 | Summary of researches annotating three germ layers.

Species	Organ	Method / Evidence	Layer-1	Layer-2	Layer-3	Reference
<i>Datura</i>	Seed, primordia of flower and axillary bud	Periclinal chimera of polyploidy	Epidermis	Subepidermal layer	Inner cells	Satina et al (1940)
<i>Datura</i>	Floral apices, shoot apex, leaf	Periclinal chimera of polyploidy	Epidermis	The initiation and development of the leaf, sepal and petal	The central core; the initiation and early development of the	Satina and Blakeslee (1941)
Dicotyledonous and monocotyledonous plants	Leaf and bud	Periclinal chimera of polyploidy and chlorophyll variegations	Epidermis	A considerable portion of the marginal area	The central part of the leaf blade	Dermen (1947)
Peach	Stem and leaf	Periclinal chimera of polyploidy	Epidermis	Mesophyll and vascular tissues in leaf blade	Ground tissue and vascular tissue in midrib	Dermen (1953)
Tobacco	Leaf and fruits	Periclinal chimera of polyploidy and chlorophyll	Epidermis	Sporogenous tissue including pollen and egg cells	–	Burk et al (1964)
<i>Euphorbia pulcherrima</i>	Stem, leaf and flower	Periclinal chimera of chlorophyll variegations	Epidermis	Subepidermal cells over the entire leaf and to deeper cells	Inner tissue	Stewart (1965)
Tobacco	Leaf and ovary	Periclinal chimera of chlorophyll variegations	Epidermis	Subepidermal layer of cells over the entire lamina, as well as to the remaining internal cells in an area of irregular width around the	The central core of green cells; initiation of the buttress and formation of the axis	Stewart and Burk (1970)
Potato	Adventitious buds form eye-excised tubers	Periclinal chimeras	Epidermis	Subepidermal cells; outer cortex	Inner cortex, vascular tissue, pith and adventitious buds	Howard (1970)
<i>Ligustrum ovalifolium</i>	Shoot apices	mericlinal chimera of chlorophyll variegations	Epidermis	All internal leaf tissue except the midrib	Midrib	Stewart and Dermen (1970a)
<i>Indianapolis chrysanthemum</i>	Petal of adventitious buds	Mericlinal chimera of variegations	Epidermis	Most true petals internal cells	Only a few cells at the midrib region at the base of the petal	Stewart and Dermen (1970b)
<i>Geranium</i>	Stem, leaf and flower	Periclinal and mericlinal chimera of chlorophyll variegations	Epidermis	Subepidermal cells over the entire leaf and to deeper cells near the leaf edge	Inner tissue, vascular bundles and axis	Stewart et al (1974)
<i>Ligustrum ovalifolium</i> , tobacco, ivy	Shoots and leaves	Periclinal chimera of chlorophyll variegations	Epidermis	Proximal regions of the buttress, axis (petiole and midrib) and lamina; distal and marginal	The rest of the internal tissue of leaf; the bulk of the internal tissue of stem	Stewart and Dermen (1975)
Potato	Leaves	Periclinal chimera of chlorophyll variegations	Epidermis	Most of the tissues of a leaf	Central parts of leaflets	Howard (1978)
Monocotyledons	Stem	Periclinal chimera of chlorophyll variegations	Epidermis	One or two hypodermal cell layers of stem	The bulk of the stem tissue	Stewart and Dermen (1979)
African violet	Leaf and adventitious shoots	Periclinal chimera of chlorophyll variegations	Epidermis	Subepidermal layer of the leaf cells and to internal cells around	The remaining internal portion of the leaf; vascular system	Norris et al (1983)

Cotton	Leaf	Chimeras produced via semigamy	Epidermis	Subepidermal mesophyll	Middle mesophyll of the lamina and the vasculature of	Christianson (1986)
<i>Nicotiana tabacum</i>	Leaf	Periclinal chimera of chlorophyll variegations	Epidermis	Most palisade and lower spongy mesophyll, marginal region of upper and middle spongy	Internal region of upper and middle spongy mesophyll	Poethig (1987)
Maize	Shoot meristem and leaf	Clonal analysis of irradiation mutant	Epidermis	Subepidermal tissue	No particular L3	McDaniel and Poethig (1988)
Maize	Leaf	Clonal analysis of spontaneous striping mutants	Epidermis	Inner tissue including vascular tissue, bundle sheath, and	No particular L3	Langdale et al (1989)
Maize	Leaf and anther	Review	Epidermis	Inner tissue including vascular tissue, bundle sheath, and	No particular L3	Dawe and Freeling (1991)
Tomato	Leaf and flower	Periclinal chimeras between plants that differ in the number of carpels per flower	Epidermis	Margins of leaf and sepal	Centers of leaf and sepal; determining floral meristem size and carpel number	Szymkowiak and Sussex (1992)
<i>Arabidopsis</i>	Leaf	Clonal analysis of irradiation mutant	Epidermis	Palisade layer and lower spongy mesophyll layer in the centre of the leaf and all of the mesophyll at the leaf margin; the axillary meristems of the cauline leaves	The centre of the stem and a rather variable and irregular core in the leaves	Furner and Pumfrey (1992)
<i>Arabidopsis</i>	Leaf	Review	Epidermis	Subepidermal mesophyll	Cortex and vascular tissues	Irish and Sussex
Tobacco	Anther	Histological observations	Epidermis	Microspore mother cells, endothecium, middle wall layers, The upper and lower mesophyll	Inner tapetum, vascular bundle	Goldberg et al (1993)
<i>Nicotiana sylvestris</i>	Leaf	Histological observations of morphologically-abnormal mutants	Epidermis	in proximal regions of the blade and all four mesophyll layers in distal regions of the blade	Midrib and proximal regions of middle mesophyll	Mchale (1993)
Tobacco	Leaf	Periclinal chimera of chlorophyll variegations	Epidermis	Mesophyll	Cortical and vascular tissue	Schmülling and Schell (1993)
<i>Antirrhinum majus</i>	Flower	Review	Epidermis	The mesophyll and the germ cells of the reproductive organs	Most of the internal and vascular tissues	Hantke et al (1995)
<i>Nicotiana</i>	Leaf and gametes	Graft periclinal chimera of chlorophyll variegations	Epidermis	The palisade parenchyma, the lower spongy parenchyma and all of the spongy parenchyma of the leaf margin; gametes.	Upper and middle layers of the spongy parenchyma (but does not extend to the leaf margin).	Marcotrigiano and Bernatzky (1995)
		Review	Epidermis	Subepidermal tissue including palisade and lower mesophyll; all of the internal cells in leaf margin	Internal tissue including middle mesophyll	Szymkowiak and Sussex (1996)
Tobacco	Leaf	Histological observations of morphologically-abnormal transgenic line	Epidermis	The upper (palisade) and lower (spongy) mesophyll in proximal regions of the blade and all four mesophyll layers in distal regions	Proximal regions of middle spongy mesophyll, vascular tissue	Sato et al (1996)
<i>Arabidopsis</i>	Leaf	Clonal analysis of irradiation mutant	Epidermis	The bulk of the inner tissues of the leaf	A core in the leaf and most of the stem	Furner et al (1996)
<i>Arabidopsis</i>	Shoot meristem	Sector analysis of mutation	Epidermis	The ground tissues; axillary	The core tissues	Schnittger et al

Cotton	Leaf	Chimeras produced via semigamy	Epidermis	Subepidermal mesophyll	Middle mesophyll of the lamina and the vasculature of major lateral veins	Dolan and Poethig (1998)
<i>Arabidopsis</i>		Review	Epidermis	Subepidermal layers	Central cells including leaf midrib or vasculature	Meyerowitz (1997)
<i>Arabidopsis</i>	Floral meristem	Periclinal chimera produced by Cre/loxP	Epidermis	Subepidermal layers	The central core of the meristem; vascular tissues; the inner core of the flower and portions of the carpels	Sieburth et al (1998)
<i>Arabidopsis</i>		Review	Epidermis	Mesophyll and subepidermal layers of organs as well as to the	Ground tissue and vasculature	Sessions et al (1999)
Tomato	Pedicle	Periclinal chimeras and mericlinal sectors of jointless mutant	Epidermis	Subepidermal tissue	Vascular cylinder and internal tissues	Szymkowiak and Irish (1999)
<i>Arabidopsis</i>	Floral meristem	Immunohistochemistry observation of periclinal mosaic	Epidermis	Mesophyll of flower organs	The vasculature in the basal portion of some organs; some mesophyll in the basal part of some organs.	Jenik and Irish (2000)
<i>Arabidopsis</i>	Shoot apical meristem	Review	Epidermis	Mesophyll	Vasculature	Doerner (2000)
	Shoot meristems	Review	Epidermis	Subepidermal cell layer and the gametes	The pith and the vascular system	Brand (2001)
<i>Arabidopsis</i>		Review	Epidermis	Ground tissues and germ cells	Vascular tissues of the stem and the most internal tissues of leaves and flower	Carles and Fletcher (2003)
<i>Arabidopsis</i>	Shoot	Review	Epidermis	Subepidermal tissue	Inner ground and vascular tissues	Savaldi-Goldstein et al (2007)
		Review	Epidermis	Most of the rest of the leaf	The vasculature and associated cells	Barton (2010)
Tomato		Review	Epidermis	Subepidermal mesophyll cells	Inner tissue	Filippis et al
		Review	Epidermis	Ground tissue	Vascular tissue	Soyars et al
		Review	Epidermis	The subepidermal palisade mesophyll and abaxial spongy mesophyll cells and outer sheath of vascular bundles	The deep mesophyll and vascular tissue	Frank and Chitwood (2016)
Rice	Leaf	Histological observations	Epidermis	Mesophyll cells and outer sheath of vascular bundles	Vascular tissue and outer sheath of vascular bundles	Zeng (2016)
<i>Arabidopsis</i>	Shoot, leaf and flower	Review	Epidermis	Mesodermal tissue and germ cells	The vascular tissues and pith	Zhang et al (2021)

Table S3 | TOP20 DEGs of 25 cell clusters.

Cluster	Gene	p_val	avg_log2FC	pct.1	pct.2	p_val_adj
0	AT5G44580-AT5G44580	0	1.447398223	0.834	0.285	0
0	AT5G14740-BCA2	0	1.42231387	0.941	0.438	0
0	AT4G14365-XBAT34	0	1.100317677	0.81	0.357	0
0	AT2G43920-HOL2	0	0.860069834	0.635	0.216	0
0	AT2G47140-SDR3B	0	0.808250146	0.748	0.351	0
0	AT4G38550-AT4G38550	0	0.70801461	0.673	0.306	0
0	AT3G22120-CWLP	0	0.678279523	0.42	0.149	0
0	AT3G22060-CRRSP38	0	0.648912472	0.686	0.327	0
0	AT3G46780-PTAC16	0.00E+00	0.599278176	0.694	0.334	0.00E+00
0	AT1G65390-PP2A5	4.69E-291	0.690516297	0.4	0.153	1.19E-286
0	AT4G23810-WRKY53	5.26E-252	0.58880641	0.53	0.262	1.34E-247
0	AT4G22690-CYP706A1	7.69E-248	0.798184678	0.516	0.253	1.96E-243
1	AT2G25735-AT2G25735	0	1.867445618	0.865	0.364	0
1	AT2G43570-CHI	0	1.628720408	0.85	0.341	0
1	AT1G03850-AT1G03850	0	1.532512469	0.621	0.197	0
1	AT3G53280-CYP71B5	0	1.525208537	0.761	0.298	0
1	AT1G26380-FOX1	0	1.441669542	0.597	0.187	0
1	AT2G34500-CYP710A1	0	1.441217308	0.669	0.313	0
1	AT1G32350-AOX3	0	1.411885483	0.666	0.238	0
1	AT4G22470-AT4G22470	0	1.397428098	0.821	0.359	0
1	AT3G26830-CYP71B15	0	1.381688969	0.417	0.074	0
1	AT2G35980-NHL10	0	1.371033045	0.575	0.235	0
1	AT2G24850-TAT3	0	1.348698166	0.56	0.198	0
1	AT2G26560-PLP2	0	1.31258023	0.722	0.277	0
1	AT1G13520-AT1G13520	0	1.306345036	0.479	0.091	0
1	AT2G39518-AT2G39518	0	1.294630883	0.789	0.378	0
1	AT5G13080-WRKY75	0	1.275322134	0.689	0.26	0
1	AT1G65690-NHL6	0	1.262264094	0.726	0.324	0
1	AT3G07800-TK1A	0	1.250010655	0.834	0.324	0
1	AT2G29470-GSTU3	0	1.218448143	0.709	0.279	0
1	AT5G50200-NRT3.1	0	1.142098408	0.806	0.296	0
1	AT5G25250-FLOT1	0.00E+00	1.106938536	0.697	0.21	0.00E+00
2	AT2G26560-PLP2	2.47E-298	1.068368173	0.629	0.295	6.29E-294
2	AT1G59590-ZCF37	5.43E-207	0.766052374	0.547	0.269	1.38E-202
2	AT1G26380-FOX1	8.15E-178	0.884643027	0.46	0.209	2.07E-173
2	AT3G23230-ERF098	4.52E-142	0.747149885	0.436	0.209	1.15E-137
3	AT1G29910-LHCB1.1	0	3.388060374	0.983	0.452	0
3	AT5G38420-RBCS-2B	0	3.013661186	0.881	0.218	0
3	AT2G34430-LHB1B1	0	2.972676511	0.88	0.199	0
3	AT5G54270-LHCB3	0	2.956478453	0.927	0.42	0
3	AT2G05100-LHCB2.1	0	2.91983761	0.99	0.494	0
3	AT2G05070-LHCB2.2	0	2.859711123	0.964	0.343	0
3	AT5G42530-AT5G42530	0	2.584080576	0.899	0.164	0
3	AT5G14740-BCA2	0	2.470180223	0.984	0.473	0
3	AT4G26530-FBA5	0	2.411737809	0.775	0.117	0
3	AT3G08940-LHCB4.2	0	2.32086347	0.867	0.332	0
3	AT3G01500-BCA1	0	2.252715717	0.957	0.36	0
3	AT2G21330-FBA1	0	2.166183473	0.948	0.381	0
3	AT5G64040-PSAN	0	2.158083911	0.901	0.28	0
3	AT3G27690-LHCB2.4	0	2.150348396	0.82	0.141	0
3	AT4G05180-PSBQ2	0	2.108749532	0.952	0.414	0
3	AT1G12900-GAPA-2	0	2.069590702	0.937	0.34	0
3	AT1G03130-PSAD2	0	2.055168008	0.848	0.277	0
3	AT1G31580-ECS1	0	2.037190532	0.856	0.175	0
3	AT3G16140-PSAH1	0	1.983394435	0.967	0.47	0
3	AT1G52230-PSAH2	0	1.951438184	0.851	0.256	0
4	AT5G08000-E13L3	0	1.676717016	0.675	0.094	0
4	AT2G39010-PIP2-6	0	1.629400304	0.715	0.271	0
4	AT5G24770-VSP2	0	1.566274368	0.596	0.172	0

4	AT2G01150-RHA2B	0	1.315932455	0.662	0.26	0
4	AT1G27400-RPL17A	0	1.268488454	0.841	0.407	0
4	AT1G70710-CEL1	0	1.168833499	0.646	0.156	0
4	AT2G14890-AGP9	0	1.167924852	0.68	0.185	0
4	AT1G62480-AT1G62480	0	1.16336842	0.455	0.138	0
4	AT3G16080-RPL37C	0	1.129074862	0.802	0.376	0
4	AT2G02100-PDF2.2	0	1.124973236	0.582	0.175	0
4	AT5G15230-GASA4	0	1.115533105	0.54	0.14	0
4	AT1G29980-AT1G29980	0	1.08667025	0.64	0.239	0
4	AT2G33370-RPL23A	0	1.079773852	0.764	0.362	0
4	AT1G73500-MKK9	0	1.077360296	0.62	0.265	0
4	AT2G28950-EXPA6	0	1.074037342	0.575	0.152	0
4	AT1G22160-FLZ5	0	1.073429627	0.67	0.261	0
4	AT2G03090-EXPA15	0	1.070911179	0.352	0.044	0
4	AT5G45775-RPL11C	0	1.052641719	0.725	0.311	0
4	AT5G47500-PME68	0.00E+00	1.033276245	0.387	0.098	0.00E+00
4	AT5G20630-GER3	1.68E-246	1.071382627	0.414	0.141	4.27E-242
5	AT5G22580-AT5G22580	0	3.489768813	0.969	0.332	0
5	AT3G59220-PRN1	0	2.585988977	0.931	0.333	0
5	AT5G62360-AT5G62360	0	2.397345464	0.823	0.174	0
5	AT2G01610-AT2G01610	0	2.028123858	0.9	0.21	0
5	AT3G04300-AT3G04300	0	1.945854166	0.695	0.164	0
5	AT3G57010-SSL8	0	1.87230104	0.715	0.148	0
5	AT1G14890-AT1G14890	0	1.719106741	0.881	0.239	0
5	AT3G50770-CML41	0	1.65334891	0.706	0.123	0
5	AT1G26560-BGLU40	0	1.509371091	0.88	0.376	0
5	AT2G36910-ABCB1	0	1.437194623	0.914	0.304	0
5	AT1G77120-ADH1	0	1.393881165	0.556	0.096	0
5	AT3G57800-BHLH60	0	1.314826623	0.781	0.152	0
5	AT5G53290-CRF3	0	1.263813671	0.664	0.128	0
5	AT2G46600-KIC	0	1.263339348	0.818	0.352	0
5	AT5G26220-GGCT2;1	0	1.234554155	0.639	0.203	0
5	AT4G33150-AT4G33150	0	1.215826778	0.825	0.211	0
5	AT3G17820-GLN1-3	0	1.214709852	0.873	0.423	0
5	AT3G04000-ChIADR2	0	1.208306363	0.775	0.223	0
5	AT1G44760-AT1G44760	0.00E+00	1.141790305	0.536	0.096	0.00E+00
5	AT5G59310-LTP4	6.08E-242	1.19546605	0.46	0.155	1.55E-237
6	AT1G80520-AT1G80520	0	3.150747877	0.822	0.155	0
6	AT3G14990-DJ1A	0	2.613049117	0.886	0.356	0
6	AT3G11930-AT3G11930	0	2.355297963	0.243	0.017	0
6	AT1G44800-AT1G44800	0	2.275961695	0.364	0.035	0
6	AT3G28600-AT3G28600	0	2.262179094	0.502	0.043	0
6	AT5G46590-anac096	0	2.191098772	0.615	0.063	0
6	AT3G16330-AT3G16330	0	2.05398697	0.572	0.127	0
6	AT4G37730-AtbZIP7	0	1.945277449	0.68	0.067	0
6	AT5G24800-BZIP9	0	1.87627602	0.429	0.029	0
6	AT5G57685-GDU3	0	1.824614799	0.525	0.063	0
6	AT4G30460-AT4G30460	0	1.821578575	0.215	0.019	0
6	AT5G13880-AT5G13880	0	1.792790785	0.561	0.083	0
6	AT2G02130-PDF2.3	0	1.583487484	0.34	0.02	0
6	AT4G00940-DOF4.1	0	1.57389892	0.497	0.057	0
6	AT2G38800-AT2G38800	0.00E+00	1.470295914	0.741	0.107	0.00E+00
6	AT3G55970-JRG21	1.60E-299	1.754858037	0.51	0.157	4.07E-295
6	AT2G39700-EXPA4	3.27E-268	1.437382356	0.393	0.097	8.30E-264
6	AT1G62480-AT1G62480	1.00E-215	2.212431608	0.453	0.146	2.55E-211
6	AT3G22910-ACA13	3.44E-199	1.567208984	0.546	0.231	8.75E-195
6	AT2G44460-BGLU28	1.57E-49	1.918262685	0.251	0.121	3.99E-45
7	AT5G59310-LTP4	0	1.909332753	0.603	0.159	0
7	AT3G11630-BAS1	0	1.59798697	0.957	0.413	0
7	AT3G62030-ROC4	0	1.584803019	0.922	0.408	0
7	AT2G42540-COR15A	0	1.448119811	0.63	0.166	0
7	AT1G17870-EGY3	0	1.437007919	0.719	0.256	0

7	AT3G01500-BCA1	0	1.403058497	0.909	0.388	0
7	AT2G40100-LHCB4.3	0	1.296267379	0.79	0.197	0
7	AT5G51720-NEET	0	1.240029246	0.735	0.19	0
7	AT1G09340-CRB	0.00E+00	1.122832552	0.888	0.375	0.00E+00
7	AT4G37930-SHM1	3.19E-307	1.084170017	0.894	0.409	8.11E-303
7	AT1G29070-RPL34	4.41E-288	1.175460362	0.872	0.405	1.12E-283
7	AT4G05180-PSBQ2	1.39E-273	1.090680153	0.892	0.441	3.53E-269
7	AT1G16880-ACR11	1.57E-270	1.065131393	0.884	0.413	3.99E-266
7	AT3G44890-RPL9	8.64E-261	1.103008658	0.84	0.377	2.20E-256
7	AT5G64040-PSAN	2.80E-250	1.120942792	0.786	0.313	7.11E-246
7	AT5G38420-RBCS-2B	1.42E-246	1.108159729	0.726	0.255	3.61E-242
7	AT4G25100-FSD1	2.51E-246	1.482546932	0.503	0.146	6.37E-242
7	AT2G21330-FBA1	7.09E-212	1.018128855	0.85	0.411	1.80E-207
7	AT3G23050-IAA7	4.43E-201	1.119245906	0.689	0.299	1.13E-196
7	AT5G38430-RBCS-1B	1.69E-120	1.099185043	0.456	0.173	4.30E-116
8	AT5G22270-AT5G22270	0.00E+00	2.630778298	0.923	0.186	0.00E+00
8	AT2G39400-AT2G39400	0.00E+00	2.607780252	0.954	0.437	0.00E+00
8	AT4G01950-ATGPAT3	0.00E+00	2.554322216	0.834	0.061	0.00E+00
8	AT1G01120-KCS1	0.00E+00	2.516598062	0.912	0.194	0.00E+00
8	AT3G49120-PER34	0.00E+00	2.28050607	0.865	0.216	0.00E+00
8	AT3G26200-CYP71B22	0.00E+00	2.225042073	0.584	0.123	0.00E+00
8	AT1G54410-HIRD11	0.00E+00	2.175777706	0.893	0.401	0.00E+00
8	AT5G28630-AT5G28630	0.00E+00	2.146860445	0.746	0.038	0.00E+00
8	AT5G25610-RD22	0.00E+00	2.09088945	0.823	0.092	0.00E+00
8	AT5G57510-AT5G57510	0.00E+00	1.994567669	0.747	0.223	0.00E+00
8	AT3G26450-AT3G26450	0.00E+00	1.887852605	0.685	0.053	0.00E+00
8	AT1G66100-AT1G66100	0.00E+00	1.847151808	0.515	0.009	0.00E+00
8	AT1G22890-AT1G22890	0.00E+00	1.791861794	0.765	0.137	0.00E+00
8	AT4G06746-RAP2-9	3.09E-257	1.863528818	0.826	0.342	7.86E-253
8	AT1G65690-NHL6	7.52E-247	1.981452232	0.83	0.356	1.91E-242
8	AT4G16820-PLA-I[beta]2	4.15E-216	1.920381798	0.758	0.313	1.06E-211
8	AT2G05520-GRP3	1.35E-215	2.047374443	0.867	0.379	3.44E-211
8	AT2G35980-NHL10	1.64E-211	2.095029049	0.708	0.26	4.17E-207
8	AT1G22900-DIR11	6.33E-210	1.959456826	0.543	0.152	1.61E-205
8	AT1G26380-FOX1	4.81E-188	1.833034613	0.649	0.221	1.22E-183
9	AT5G59320-LTP3	0.00E+00	3.659393451	0.75	0.202	0.00E+00
9	AT2G38540-LTP1	0.00E+00	3.287830689	0.947	0.331	0.00E+00
9	AT1G09310-AT1G09310	0.00E+00	3.159554133	0.79	0.112	0.00E+00
9	AT1G70830-MLP28	0.00E+00	2.819539685	0.591	0.041	0.00E+00
9	AT4G23680-AT4G23680	0.00E+00	2.648238735	0.612	0.116	0.00E+00
9	AT1G01120-KCS1	0.00E+00	2.193223876	0.914	0.197	0.00E+00
9	AT4G23670-AT4G23670	0.00E+00	2.019347967	0.477	0.056	0.00E+00
9	AT5G25610-RD22	0.00E+00	1.952957463	0.757	0.097	0.00E+00
9	AT3G43720-LTPG2	0.00E+00	1.952463982	0.872	0.157	0.00E+00
9	AT1G27950-LTPG1	0.00E+00	1.936101856	0.842	0.199	0.00E+00
9	AT5G43760-KCS20	0.00E+00	1.856217456	0.903	0.358	0.00E+00
9	AT4G29020-AT4G29020	0.00E+00	1.813280718	0.32	0.03	0.00E+00
9	AT4G01950-ATGPAT3	0.00E+00	1.756434983	0.635	0.07	0.00E+00
9	AT3G24420-AT3G24420	1.11E-237	1.773081547	0.615	0.165	2.83E-233
9	AT1G56580-SVB	8.35E-233	1.784857185	0.729	0.243	2.12E-228
9	AT3G18560-AT3G18560	3.90E-231	1.92888738	0.783	0.313	9.91E-227
9	AT4G15630-AT4G15630	3.12E-226	2.055362329	0.722	0.237	7.94E-222
9	AT5G44020-AT5G44020	4.10E-208	1.843871516	0.359	0.06	1.04E-203
9	AT3G13790-CWINV1	3.87E-173	1.864512497	0.703	0.298	9.83E-169
9	AT5G59310-LTP4	1.33E-121	2.329081965	0.504	0.17	3.39E-117
10	AT1G52400-BGLU18	0.00E+00	3.590398326	0.832	0.191	0.00E+00
10	AT1G72260-THI2.1	0.00E+00	3.177290816	0.648	0.104	0.00E+00
10	AT3G12145-FLR1	0.00E+00	2.951437309	0.7	0.122	0.00E+00
10	AT4G29020-AT4G29020	0.00E+00	2.712346964	0.574	0.023	0.00E+00
10	AT4G23680-AT4G23680	0.00E+00	2.52609351	0.803	0.112	0.00E+00
10	AT3G20470-GRP5	0.00E+00	2.404580661	0.61	0.037	0.00E+00
10	AT2G42840-PDF1	0.00E+00	2.317874704	0.676	0.032	0.00E+00

10	AT1G52030-F-ATMBP	0.00E+00	2.216489384	0.676	0.085	0.00E+00
10	AT1G52040-MBP1	0.00E+00	2.168883082	0.681	0.1	0.00E+00
10	AT1G54020-AT1G54020	0.00E+00	2.077417776	0.534	0.04	0.00E+00
10	AT1G01120-KCS1	0.00E+00	1.979146124	0.794	0.201	0.00E+00
10	AT4G23670-AT4G23670	0.00E+00	1.939286091	0.548	0.055	0.00E+00
10	AT3G16470-JAL35	0.00E+00	1.911663648	0.589	0.086	0.00E+00
10	AT5G60800-AT5G60800	0.00E+00	1.856291852	0.815	0.266	0.00E+00
10	AT4G18970-AT4G18970	0.00E+00	1.804578473	0.556	0.027	0.00E+00
10	AT2G27385-AT2G27385	0.00E+00	1.769121864	0.637	0.048	0.00E+00
10	AT1G70830-MLP28	0.00E+00	1.75372601	0.45	0.046	0.00E+00
10	AT3G04290-LTL1	0.00E+00	1.737971692	0.49	0.017	0.00E+00
10	AT5G24420-PGL5	2.15E-289	3.028649378	0.618	0.144	5.46E-285
10	AT1G09310-AT1G09310	2.16E-243	1.810347638	0.552	0.12	5.49E-239
11	AT1G65970-PRXIIC	0.00E+00	3.267158251	0.819	0.175	0.00E+00
11	AT1G21550-CML44	0.00E+00	2.918283095	0.863	0.197	0.00E+00
11	AT2G17500-PILS5	0.00E+00	2.852375093	0.975	0.474	0.00E+00
11	AT1G09500-AT1G09500	0.00E+00	2.666489812	0.692	0.085	0.00E+00
11	AT3G25290-AT3G25290	0.00E+00	2.352323909	0.802	0.198	0.00E+00
11	AT4G02940-ALKBH10B	0.00E+00	2.153812429	0.935	0.32	0.00E+00
11	AT2G29470-GSTU3	0.00E+00	2.027686132	0.908	0.314	0.00E+00
11	AT3G01970-WRKY45	0.00E+00	1.904033496	0.735	0.059	0.00E+00
11	AT1G47510-IP5P11	0.00E+00	1.796036034	0.849	0.205	0.00E+00
11	AT2G29350-SAG13	1.23E-295	2.910037226	0.61	0.129	3.13E-291
11	AT3G24100-AT3G24100	4.18E-291	1.762432725	0.94	0.455	1.06E-286
11	AT1G56300-AT1G56300	1.40E-253	1.678742206	0.899	0.443	3.56E-249
11	AT3G25597-AT3G25597	1.03E-247	1.753273511	0.881	0.361	2.61E-243
11	AT1G78600-LZF1	6.81E-234	1.580254284	0.843	0.371	1.73E-229
11	AT3G49580-LSU1	1.41E-208	1.542954062	0.799	0.313	3.57E-204
11	AT5G16980-AT5G16980	4.63E-208	1.863897302	0.817	0.355	1.18E-203
11	AT5G27350-SFP1	4.39E-206	1.647512764	0.7	0.231	1.12E-201
11	AT1G65690-NHL6	2.46E-197	1.4886668	0.846	0.359	6.25E-193
11	AT3G19270-CYP707A4	1.13E-163	1.611584894	0.496	0.131	2.87E-159
11	AT3G03270-AT3G03270	2.56E-159	1.768063236	0.571	0.175	6.52E-155
12	AT1G52400-BGLU18	0	2.905051971	0.848	0.193	0
12	AT1G52040-MBP1	0	2.311635724	0.735	0.101	0
12	AT3G45610-DOF3.2	0	2.061598659	0.715	0.052	0
12	AT1G52030-F-ATMBP	0	1.974607413	0.663	0.088	0
12	AT3G16470-JAL35	0	1.597095337	0.587	0.088	0
12	AT1G54020-AT1G54020	0.00E+00	1.420763673	0.448	0.044	0.00E+00
12	AT3G50410-DOF3.4	1.66E-306	1.227306225	0.644	0.12	4.22E-302
12	AT5G22580-AT5G22580	2.14E-256	2.01229155	0.957	0.369	5.45E-252
12	AT5G24780-VSP1	1.61E-224	1.778645577	0.631	0.146	4.10E-220
12	AT1G14890-AT1G14890	4.29E-215	1.737739714	0.819	0.277	1.09E-210
12	AT1G14870-PCR2	2.52E-205	1.831561046	0.931	0.457	6.40E-201
12	AT1G72260-THI2.1	1.23E-196	2.281171226	0.509	0.109	3.14E-192
12	AT1G01620-PIP1-3	8.05E-188	1.506417845	0.878	0.412	2.05E-183
12	AT2G33810-SPL3	9.65E-187	1.192011367	0.631	0.178	2.45E-182
12	AT5G24420-PGL5	5.75E-179	2.34658347	0.559	0.147	1.46E-174
12	AT3G12145-FLR1	1.25E-173	1.288741945	0.539	0.128	3.17E-169
12	AT3G50890-ZHD7	9.60E-155	1.295493113	0.661	0.23	2.44E-150
12	AT4G10250-HSP22.0	1.28E-113	1.319540271	0.852	0.418	3.27E-109
12	AT2G01150-RHA2B	3.39E-112	1.123639386	0.681	0.285	8.61E-108
12	AT5G62360-AT5G62360	5.74E-73	1.162944214	0.531	0.218	1.46E-68
13	AT1G58225-AT1G58225	0	2.532314481	0.602	0.072	0
13	AT3G57260-BGL2	0	2.515707583	0.406	0.042	0
13	AT5G52760-HIPP14	0	2.160841927	0.7	0.14	0
13	AT4G23140-CRK6	0.00E+00	2.054365264	0.537	0.037	0.00E+00
13	AT1G09932-AT1G09932	1.43E-295	1.821247825	0.665	0.136	3.64E-291
13	AT4G21850-MSRB9	2.04E-212	1.68130177	0.35	0.049	5.20E-208
13	AT5G52750-HIPP13	7.44E-209	1.488990849	0.706	0.2	1.89E-204
13	AT5G43650-BHLH92	7.21E-182	1.410503903	0.467	0.098	1.83E-177
13	AT1G08450-CRT3	3.51E-174	1.591655757	0.735	0.297	8.92E-170

13	AT4G11890-AT4G11890	7.24E-165	1.493763975	0.613	0.187	1.84E-160
13	AT4G23810-WRKY53	4.01E-157	1.732179499	0.733	0.295	1.02E-152
13	AT2G17040-anac036	4.11E-149	1.356609446	0.622	0.196	1.04E-144
13	AT4G14365-XBAT34	6.19E-149	1.539187841	0.867	0.419	1.57E-144
13	AT2G24850-TAT3	3.99E-132	2.022426846	0.635	0.231	1.01E-127
13	AT5G24110-WRKY30	1.31E-130	1.318247553	0.394	0.091	3.33E-126
13	AT2G25510-AT2G25510	3.82E-126	1.421244048	0.563	0.183	9.71E-122
13	AT5G64120-PER71	1.04E-125	1.398531917	0.504	0.15	2.65E-121
13	AT1G31580-ECS1	3.56E-123	1.528965814	0.611	0.226	9.06E-119
13	AT5G22630-ADT5	5.20E-113	1.554731882	0.624	0.247	1.32E-108
13	AT1G56240-PP2B13	2.93E-60	1.311376011	0.4	0.154	7.45E-56
14	AT1G56340-CRT1	4.88E-232	1.604782335	0.804	0.255	1.24E-227
14	AT2G43000-JUB1	1.72E-216	1.647720477	0.52	0.098	4.38E-212
14	AT1G21750-PDIL1-1	3.74E-210	1.317044864	0.834	0.288	9.49E-206
14	AT3G49580-LSU1	9.12E-188	1.334730511	0.858	0.314	2.32E-183
14	AT5G26220-GGCT2;1	5.85E-171	1.338889132	0.729	0.227	1.49E-166
14	AT3G62600-ERDJ3B	2.04E-167	1.254021813	0.84	0.345	5.19E-163
14	AT2G30620-AT2G30620	2.59E-161	1.359225605	0.755	0.274	6.59E-157
14	AT1G06760-AT1G06760	1.17E-160	1.429872097	0.787	0.301	2.97E-156
14	AT3G45980-H2B	2.00E-157	1.323588776	0.82	0.341	5.08E-153
14	AT4G24190-HSP90-7	8.03E-148	1.548513052	0.769	0.31	2.04E-143
14	AT2G34500-CYP710A1	1.86E-120	1.798990349	0.771	0.345	4.73E-116
14	AT5G05340-PER52	2.23E-118	2.175344675	0.538	0.177	5.66E-114
14	AT3G59220-PRN1	3.78E-104	1.329320679	0.769	0.372	9.60E-100
14	AT1G10585-BHLH167	9.92E-100	1.342877303	0.779	0.385	2.52E-95
14	AT2G35980-NHL10	3.61E-78	1.271076058	0.611	0.267	9.17E-74
14	AT2G45220-PME17	2.00E-51	1.334843877	0.231	0.065	5.09E-47
14	AT2G44460-BGLU28	2.41E-49	1.690528833	0.338	0.124	6.13E-45
14	AT2G29350-SAG13	1.77E-34	1.306410295	0.322	0.138	4.49E-30
14	AT5G36970-NHL25	9.23E-32	1.374823329	0.251	0.1	2.35E-27
14	AT3G26830-CYP71B15	3.07E-26	1.355441668	0.253	0.111	7.81E-22
15	AT2G34870-MEE26	0	4.474257056	0.48	0.017	0
15	AT1G30795-AT1G30795	0	3.653467437	0.528	0.021	0
15	AT2G32690-GRP23	0	2.992268664	0.641	0.06	0
15	AT2G27385-AT2G27385	0	2.875532458	0.631	0.054	0
15	AT2G02850-ARPN	0	2.823041506	0.601	0.039	0
15	AT5G09730-BXL3	0	2.811282815	0.497	0.016	0
15	AT3G08770-LTP6	0	2.743818525	0.596	0.063	0
15	AT4G21620-AT4G21620	0	2.333915092	0.747	0.088	0
15	AT5G08260-SCPL35	0	1.850469515	0.48	0.024	0
15	AT1G58360-AAP1	0.00E+00	1.790346642	0.707	0.088	0.00E+00
15	AT5G66590-AT5G66590	5.47E-295	1.956377914	0.321	0.022	1.39E-290
15	AT1G27950-LTPG1	2.83E-247	2.498156289	0.831	0.207	7.18E-243
15	AT2G38540-LTP1	1.16E-201	2.875738394	0.919	0.339	2.96E-197
15	AT1G04250-IAA17	4.25E-173	1.809295782	0.492	0.093	1.08E-168
15	AT5G24780-VSP1	2.28E-166	4.192745547	0.606	0.15	5.79E-162
15	AT3G22840-ELIP1	3.50E-152	2.033049073	0.755	0.251	8.90E-148
15	AT2G38530-LTP2	2.95E-129	2.44934444	0.604	0.17	7.49E-125
15	AT2G39350-ABCG1	3.31E-125	1.867055153	0.801	0.339	8.41E-121
15	AT5G59320-LTP3	5.85E-37	2.024780645	0.475	0.213	1.49E-32
15	AT2G44460-BGLU28	2.17E-19	1.842269569	0.278	0.126	5.51E-15
16	AT3G24420-AT3G24420	0	3.922220799	0.848	0.168	0
16	AT2G20870-AT2G20870	0	3.541202061	0.34	0.007	0
16	AT1G27950-LTPG1	0	2.80893994	0.961	0.206	0
16	AT5G25610-RD22	0	2.559452077	0.836	0.105	0
16	AT3G43720-LTPG2	0	2.469980853	0.928	0.166	0
16	AT5G22430-AT5G22430	0	2.401676612	0.254	0.004	0
16	AT5G22500-FAR1	0	2.362985247	0.585	0.037	0
16	AT2G26250-FDH	0.00E+00	2.142561202	0.812	0.07	0.00E+00
16	AT2G38530-LTP2	1.07E-263	3.837617536	0.803	0.168	2.72E-259
16	AT5G14180-LIP2	1.72E-257	2.186701462	0.606	0.088	4.38E-253
16	AT4G18910-NIP1-2	1.51E-256	2.085559687	0.845	0.192	3.84E-252

16	AT2G38540-LTP1	1.25E-251	4.03590012	0.982	0.339	3.17E-247
16	AT3G28910-MYB30	2.51E-244	1.989254411	0.752	0.143	6.37E-240
16	AT1G01120-KCS1	1.03E-221	2.154477215	0.851	0.208	2.63E-217
16	AT5G44020-AT5G44020	1.18E-212	2.065936116	0.481	0.063	3.00E-208
16	AT3G13790-CWINV1	2.02E-190	2.343202994	0.869	0.301	5.13E-186
16	AT4G15630-AT4G15630	3.02E-190	2.858957731	0.821	0.242	7.67E-186
16	AT2G39350-ABCG1	1.40E-182	2.120295179	0.925	0.338	3.55E-178
16	AT1G56580-SVB	2.59E-168	2.666896001	0.803	0.249	6.59E-164
16	AT3G59220-PRN1	4.35E-135	2.020195302	0.893	0.373	1.11E-130
17	AT1G04800-AT1G04800	0	2.679678107	0.447	0.004	0
17	AT3G53720-CHX20	0	2.610693601	0.86	0.071	0
17	AT3G52770-ZPR3	0	2.5249463	0.606	0.018	0
17	AT4G18050-PGP9	0	2.415145887	0.92	0.056	0
17	AT5G38200-AT5G38200	0	2.23754318	0.667	0.07	0
17	AT4G38420-sks9	0	2.187049497	0.591	0.01	0
17	AT1G10060-ATBCAT-1	0.00E+00	2.17804806	0.788	0.038	0.00E+00
17	AT3G52520-AT3G52520	2.04E-273	2.250410756	0.803	0.128	5.20E-269
17	AT1G64660-MGL	1.83E-189	2.12107825	0.674	0.124	4.66E-185
17	AT4G02940-ALKBH10B	7.65E-184	2.819549791	0.955	0.329	1.94E-179
17	AT3G28910-MYB30	4.55E-178	2.831777677	0.716	0.145	1.16E-173
17	AT2G38310-PYL4	6.76E-176	2.294471743	0.909	0.298	1.72E-171
17	AT4G18280-AT4G18280	3.28E-170	2.876716692	0.78	0.187	8.33E-166
17	AT2G43520-ATTI2	1.18E-150	2.288579755	0.773	0.212	2.99E-146
17	AT3G57020-SSL9	2.22E-141	2.603180349	0.92	0.438	5.65E-137
17	AT4G22620-AT4G22620	3.21E-136	2.120377414	0.602	0.129	8.17E-132
17	AT1G32350-AOX3	3.91E-110	2.254886409	0.788	0.282	9.93E-106
17	AT4G25260-PMEI7	7.33E-109	2.187300873	0.53	0.118	1.86E-104
17	AT3G50970-XERO2	2.91E-108	2.522026418	0.678	0.209	7.40E-104
17	AT1G75750-GASA1	1.32E-17	2.142130329	0.322	0.16	3.36E-13
18	AT3G15353-MT3	0	6.515988623	0.936	0.122	0
18	AT1G67865-AT1G67865	0	5.410768725	0.697	0.04	0
18	AT5G09220-AAP2	0	4.453240509	0.375	0.008	0
18	AT5G18600-GRXS2	0	4.439558604	0.629	0.018	0
18	AT4G19840-PP2A1	0	4.359022354	0.849	0.022	0
18	AT5G04080-AT5G04080	0	4.340230667	0.928	0.02	0
18	AT1G54575-AT1G54575	0	4.204613601	0.845	0.016	0
18	AT1G67870-AT1G67870	0	4.195401907	0.669	0.013	0
18	AT3G56240-CCH	0	3.750526342	0.9	0.035	0
18	AT1G22710-SUC2	0	3.597610521	0.892	0.037	0
18	AT1G67860-AT1G67860	0	3.291252777	0.534	0.007	0
18	AT2G30540-GRXS9	0	3.247726219	0.486	0.006	0
18	AT3G19550-AT3G19550	0	3.153718603	0.371	0.005	0
18	AT5G22090-AT5G22090	0	3.122879395	0.697	0.026	0
18	AT1G24575-AT1G24575	0	2.996888481	0.426	0.009	0
18	AT5G57350-AHA3	0.00E+00	2.966777155	0.908	0.016	0.00E+00
18	AT1G64370-AT1G64370	9.30E-192	4.28132402	0.355	0.029	2.36E-187
18	AT5G12140-CYS1	1.95E-186	3.351687154	0.976	0.404	4.97E-182
18	AT4G38740-CYP18-3	5.06E-185	4.755313125	0.948	0.345	1.29E-180
18	AT1G54410-HIRD11	1.61E-164	4.367311126	0.968	0.411	4.10E-160
19	AT1G72290-WSCP	0	5.134651052	0.472	0.027	0
19	AT1G53130-GRI	0	5.047301625	0.702	0.016	0
19	AT1G44970-PER9	0	5.032836811	0.615	0.009	0
19	AT1G25330-BHLH75	0	3.98543664	0.844	0.022	0
19	AT1G30795-AT1G30795	0	3.826232191	0.683	0.023	0
19	AT1G02335-GL22	0	3.594928742	0.445	0.003	0
19	AT4G23690-DIR6	0	3.490296514	0.564	0.009	0
19	AT2G02850-ARPN	0	3.449188025	0.743	0.042	0
19	AT3G01530-MYB57	0	3.202820233	0.706	0.014	0
19	AT3G27810-MYB21	0	3.106632514	0.688	0.055	0
19	AT1G21460-SWEET1	0	2.688714333	0.647	0.042	0
19	AT2G19800-MIOX2	0.00E+00	2.686986959	0.775	0.082	0.00E+00
19	AT1G04250-IAA17	5.30E-252	3.364823276	0.734	0.094	1.35E-247

19	AT1G70670-PXG4	1.20E-163	2.75978036	0.592	0.088	3.05E-159
19	AT2G38530-LTP2	3.43E-163	5.15671737	0.78	0.171	8.71E-159
19	AT5G45880-AT5G45880	9.86E-146	4.886557755	0.427	0.05	2.51E-141
19	AT3G23050-IAA7	2.78E-139	2.804627925	0.917	0.311	7.08E-135
19	AT4G27670-HSP21	1.24E-83	2.984029077	0.624	0.176	3.14E-79
19	AT4G10250-HSP22.0	6.37E-75	2.539536492	0.904	0.424	1.62E-70
19	AT2G38540-LTP1	1.08E-25	3.485255792	0.693	0.345	2.76E-21
20	AT3G14210-ESM1	6.98E-201	3.228280476	0.863	0.148	1.77E-196
20	AT5G38430-RBCS-1B	3.36E-189	3.026195961	0.918	0.18	8.55E-185
20	AT1G12090-ELP	2.41E-164	2.177721377	0.77	0.13	6.12E-160
20	AT2G45180-AT2G45180	6.40E-160	2.93936214	0.831	0.162	1.63E-155
20	AT3G27690-LHCB2.4	3.07E-153	2.744852591	0.88	0.195	7.81E-149
20	AT1G72610-GLP1	8.41E-149	3.247212458	0.951	0.267	2.14E-144
20	AT2G41250-AT2G41250	1.17E-148	2.179305597	0.945	0.269	2.96E-144
20	AT4G21960-PER42	4.10E-140	2.910833118	0.885	0.221	1.04E-135
20	AT5G42530-AT5G42530	2.26E-133	2.960943656	0.88	0.223	5.74E-129
20	AT1G31580-ECS1	3.74E-131	2.690716827	0.885	0.229	9.50E-127
20	AT2G10940-AT2G10940	4.28E-129	3.392616497	0.94	0.32	1.09E-124
20	AT2G25510-AT2G25510	1.28E-116	2.522188209	0.798	0.187	3.27E-112
20	AT5G38420-RBCS-2B	1.32E-116	2.646197607	0.902	0.271	3.37E-112
20	AT2G05070-LHCB2.2	5.41E-116	2.897691402	0.989	0.393	1.38E-111
20	AT2G21330-FBA1	3.37E-106	2.239095698	0.978	0.426	8.57E-102
20	AT1G12900-GAPA-2	1.55E-103	2.204094275	0.951	0.388	3.95E-99
20	AT3G08940-LHCB4.2	2.50E-100	2.681422506	0.934	0.375	6.36E-96
20	AT5G54270-LHCB3	8.84E-94	2.525261544	0.973	0.461	2.25E-89
20	AT2G34430-LHB1B1	6.00E-79	2.360493419	0.798	0.255	1.52E-74
20	AT1G60950-FD2	1.43E-78	2.163048866	0.902	0.424	3.63E-74
21	AT2G43610-AT2G43610	0	5.22109705	0.542	0.013	0
21	AT5G20330-BG4	0	3.217664954	0.525	0.006	0
21	AT4G14130-XTH15	0	3.158579461	0.633	0.016	0
21	AT3G26140-AT3G26140	0	3.153086353	0.642	0.006	0
21	AT1G02800-CEL2	0	2.757896015	0.508	0.008	0
21	AT1G67750-AT1G67750	0.00E+00	2.633140183	0.742	0.017	0.00E+00
21	AT1G25330-BHLH75	2.85E-284	3.016552881	0.583	0.027	7.25E-280
21	AT4G14560-IAA1	4.99E-280	2.954272231	0.617	0.031	1.27E-275
21	AT1G53130-GRI	3.38E-246	5.016113621	0.467	0.02	8.58E-242
21	AT1G44970-PER9	1.67E-220	4.026738371	0.358	0.013	4.23E-216
21	AT1G72290-WSCP	1.04E-207	6.980927466	0.508	0.029	2.64E-203
21	AT1G12080-AT1G12080	1.53E-195	2.389155574	0.575	0.039	3.88E-191
21	AT5G48485-DIR1	2.29E-134	2.777007879	0.733	0.096	5.81E-130
21	AT1G70370-PGL3	7.72E-120	2.559573868	0.733	0.11	1.96E-115
21	AT5G24580-HIPP09	6.64E-99	2.706359649	0.85	0.176	1.69E-94
21	AT2G38530-LTP2	1.94E-84	4.235298459	0.775	0.174	4.93E-80
21	AT1G56220-AT1G56220	4.18E-67	2.885957947	0.95	0.394	1.06E-62
21	AT3G23050-IAA7	9.84E-63	3.273189254	0.825	0.314	2.50E-58
21	AT2G37170-PIP2B	9.20E-59	2.922906448	0.575	0.125	2.34E-54
21	AT1G12090-ELP	5.01E-25	2.754047658	0.417	0.133	1.27E-20
22	AT1G63310-AT1G63310	0.00E+00	5.781170873	0.973	0.006	0.00E+00
22	AT5G18970-AT5G18970	0.00E+00	5.623594536	0.919	0.01	0.00E+00
22	AT1G29520-AT1G29520	0.00E+00	5.314129002	0.892	0.004	0.00E+00
22	AT3G20570-ENODL9	0.00E+00	5.234980781	0.716	0.002	0.00E+00
22	AT1G08160-AT1G08160	0.00E+00	4.811152709	0.919	0.002	0.00E+00
22	AT1G02950-ATGSTF4	0.00E+00	4.395473777	0.514	0.002	0.00E+00
22	AT3G01670-AT3G01670	0.00E+00	4.276401446	0.811	0.004	0.00E+00
22	AT1G05760-RTM1	0.00E+00	4.132387949	0.378	0.004	0.00E+00
22	AT2G46630-AT2G46630	0.00E+00	4.125002109	0.865	0.006	0.00E+00
22	AT1G68230-RTNLB14	0.00E+00	4.027990053	0.297	0.003	0.00E+00
22	AT2G42820-HVA22F	0.00E+00	3.888848321	0.486	0.001	0.00E+00
22	AT2G27140-AT2G27140	0.00E+00	3.874837618	0.405	0.002	0.00E+00
22	AT1G77700-AT1G77700	0.00E+00	3.781485419	0.541	0.001	0.00E+00
22	AT5G46530-AT5G46530	0.00E+00	3.771536299	0.608	0.001	0.00E+00
22	AT4G21310-AT4G21310	0.00E+00	3.618145087	0.689	0.006	0.00E+00

22	AT5G03510-AT5G03510	0.00E+00	3.580705516	0.541	0.001	0.00E+00
22	AT5G20970-AT5G20970	0.00E+00	3.504588928	0.392	0.001	0.00E+00
22	AT5G04890-RTM2	1.56E-205	4.392513924	0.432	0.013	3.98E-201
22	AT1G70670-PXG4	1.41E-127	3.563945698	0.851	0.09	3.59E-123
22	AT3G63000-NPL41	7.57E-92	3.894566026	0.892	0.148	1.92E-87
23	AT3G57600-DREB2F	0.00E+00	1.85835542	0.38	0.002	0.00E+00
23	AT3G56620-AT3G56620	4.49E-216	3.273850663	0.88	0.037	1.14E-211
23	AT2G34810-AT2G34810	5.64E-110	4.095231893	0.86	0.075	1.43E-105
23	AT5G25980-TGG2	4.14E-79	7.662776441	0.98	0.156	1.05E-74
23	AT3G16400-NSP1	4.26E-74	3.7905834	0.72	0.075	1.08E-69
23	AT5G48485-DIR1	1.21E-72	2.247309236	0.82	0.098	3.09E-68
23	AT1G63180-UGE3	1.38E-60	2.110052983	0.72	0.092	3.50E-56
23	AT4G18280-AT4G18280	1.17E-58	3.884164195	0.96	0.192	2.97E-54
23	AT5G21105-AT5G21105	4.36E-55	1.995129831	0.72	0.096	1.11E-50
23	AT5G26000-TGG1	5.53E-55	8.748288326	0.98	0.251	1.41E-50
23	AT4G37430-CYP81F1	2.19E-47	1.865516272	0.84	0.159	5.57E-43
23	AT3G49120-PER34	2.39E-41	2.979303581	0.9	0.235	6.07E-37
23	AT2G19810-AT2G19810	1.84E-39	1.789823812	0.5	0.065	4.67E-35
23	AT2G31360-ADS2	6.33E-35	1.798440086	0.78	0.186	1.61E-30
23	AT3G53720-CHX20	4.71E-26	2.104157306	0.46	0.08	1.20E-21
23	AT4G01700-AT4G01700	4.96E-24	2.162897161	0.48	0.092	1.26E-19
23	AT5G66400-RAB18	1.25E-20	2.431662974	0.2	0.019	3.19E-16
23	AT2G37180-PIP2-3	2.69E-17	1.903454187	0.66	0.218	6.83E-13
23	AT5G58710-CYP20-1	1.76E-12	1.907539919	0.58	0.225	4.47E-08
23	AT2G37170-PIP2B	1.40E-09	1.818214807	0.4	0.126	3.57E-05
24	AT1G20850-XCP2	0.00E+00	7.050668447	1	0.004	0.00E+00
24	AT3G27200-AT3G27200	0.00E+00	5.697963684	0.947	0.002	0.00E+00
24	AT3G16920-CTL2	0.00E+00	5.233764546	0.842	0.005	0.00E+00
24	AT2G28760-UXS6	0.00E+00	5.226359676	0.842	0.004	0.00E+00
24	AT5G03170-FLA11	0.00E+00	5.084412062	0.737	0.002	0.00E+00
24	AT4G35350-XCP1	0.00E+00	4.916073857	1	0.002	0.00E+00
24	AT1G32100-PRR1	0.00E+00	4.603356081	0.895	0.005	0.00E+00
24	AT5G51890-PER66	0.00E+00	4.511962839	0.684	0.002	0.00E+00
24	AT1G58070-AT1G58070	0.00E+00	4.415213374	0.947	0.001	0.00E+00
24	AT5G16490-RIC4	0.00E+00	4.392796104	1	0.001	0.00E+00
24	AT1G43790-TED6	0.00E+00	4.287517209	0.316	0	0.00E+00
24	AT3G62020-GLP10	2.73E-264	4.643842413	0.947	0.014	6.94E-260
24	AT4G27435-AT4G27435	4.66E-248	4.397762779	0.737	0.009	1.18E-243
24	AT3G51220-AT3G51220	1.12E-238	4.07283651	0.474	0.004	2.84E-234
24	AT1G02335-GL22	1.98E-228	4.550940222	0.632	0.007	5.03E-224
24	AT5G60490-FLA12	9.54E-136	4.028707838	0.526	0.008	2.42E-131
24	AT3G21550-DMP2	1.28E-131	5.418047067	0.947	0.028	3.25E-127
24	AT3G56240-CCH	8.01E-99	6.317691158	1	0.044	2.04E-94
24	AT5G59290-UXS3	6.70E-16	4.989638289	0.842	0.231	1.70E-11
24	AT3G53620-PPA4	8.71E-15	4.043082714	0.947	0.409	2.21E-10

Table S4 | Marker genes for cell type annotation.

Gene	Cell type	Gene	Cell type	Gene	Cell type
AT2G42840-PDF1	epidermis	AT3G11930-AT3G11930	vascular tissue	AT1G13710-CYP78A5	meristem
AT2G26250-FDH	epidermis	AT3G20570-ENODL9	vascular tissue	AT3G19710-BCAT4	meristem
AT4G21750-ATML1	epidermis	AT1G29520-AT1G29520	vascular tissue	AT5G14200-IMDH3	meristem
AT1G72970-HTH	epidermis	AT3G01680-SEOB	vascular tissue	AT2G43100-IPM12	meristem
AT1G64670-BDG1	epidermis	AT1G63310-AT1G63310	vascular tissue	AT1G16410-CYP79F1	meristem
AT4G32460-AT4G32460	epidermis	AT5G18970-AT5G18970	vascular tissue	AT1G78370-GSTU20	meristem
AT5G23940-DCR	epidermis	AT3G01670-AT3G01670	vascular tissue	AT4G14040-SBP2	meristem
AT3G08770-LTP6	epidermis	AT1G08160-AT1G08160	vascular tissue	AT5G23010-MAM1	meristem
AT2G38540-LTP1	epidermis	AT2G32860-BGLU33	vascular tissue	AT3G03780-MS2	meristem
AT3G09260-BGLU23	epidermis	AT5G46530-AT5G46530	vascular tissue	AT2G25450-GSL-OH	meristem
AT1G70890-MLP43	epidermis	AT3G01950-AT3G01950	vascular tissue	AT4G39940-APK2	meristem
AT3G16420-PBP1	epidermis	AT2G46630-AT2G46630	vascular tissue	AT4G13770-CYP83A1	meristem
AT1G09310-AT1G09310	epidermis	AT1G02950-ATGSTF4	vascular tissue	AT2G46650-CYTB5-C	meristem
AT4G23670-AT4G23670	epidermis	AT3G03270-AT3G03270	vascular tissue	AT2G30860-GSTF9	meristem
AT5G36910-THI2.2	epidermis	AT5G40980-AT5G40980	vascular tissue	AT3G58990-IPM11	meristem
AT4G38770-PRP4	epidermis	AT2G42820-HVA22F	vascular tissue	AT3G22890-APS1	meristem
AT3G16400-NSP1	epidermis	AT1G14730-CYB561C	vascular tissue	AT3G54600-DJ1F	meristem
AT2G05520-GRP3	epidermis	AT3G01940-AT3G01940	vascular tissue	AT1G62360-STM	meristem
AT2G06850-XTH4	epidermis	AT3G20450-AT3G20450	vascular tissue	AT4G08150-KNAT1	meristem
AT5G24770-VSP2	epidermis	AT2G27030-CAM5	vascular tissue	AT1G23380-KNAT6	meristem
AT2G05540-AT2G05540	epidermis	AT3G18280-AT3G18280	vascular tissue	AT1G70510-KNAT2	meristem
AT3G16370-APG	epidermis	AT5G10180-SULTR2;1	vascular tissue	AT1G46480-WOX4	meristem
AT4G37800-XTH7	epidermis	AT2G24762-GDU4	vascular tissue	AT5G61850-LFY	meristem
AT2G39310-JAL22	epidermis	AT2G43120-AT2G43120	vascular tissue	AT5G38420-RBCS-2B	mesophyll cell
AT2G32690-GRP23	epidermis	AT1G80760-NIP6-1	vascular tissue	AT5G20230-BCB	mesophyll cell
AT1G45201-ATTLL1	epidermis	AT1G61660-BHLH112	vascular tissue	AT1G76650-CML38	mesophyll cell
AT2G05380-GRP3S	epidermis	AT3G15990-SULTR3;4	vascular tissue	AT2G41100-CML12	mesophyll cell
AT5G26000-TGG1	guard cell	AT1G67870-AT1G67870	companion cell	AT3G25770-AOC2	mesophyll cell
AT1G04800-AT1G04800	guard cell	AT1G64370-AT1G64370	companion cell	AT5G42530-AT5G42530	mesophyll cell
AT1G22690-GASA9	guard cell	AT4G19840-PP2A1	companion cell	AT1G31580-ECS1	mesophyll cell
AT3G46230-HSP17.4A	guard cell	AT4G00780-AT4G00780	companion cell	AT2G25510-AT2G25510	mesophyll cell
AT5G66400-RAB18	guard cell	AT1G54410-HIRD11	companion cell	AT2G05380-GRP3S	mesophyll cell
AT3G12580-MED37C	guard cell	AT4G36570-ATRL3	companion cell	AT2G45180-AT2G45180	mesophyll cell
AT5G12030-HSP17.7	guard cell	AT5G22090-AT5G22090	companion cell	AT1G74670-GASA6	mesophyll cell
AT1G11850-AT1G11850	guard cell	AT4G19200-AT4G19200	companion cell	AT2G34430-LHB1B1	mesophyll cell
AT5G12020-HSP17.6	guard cell	AT3G15353-MT3	companion cell	AT1G49500-AT1G49500	mesophyll cell
AT1G53540-HSP17.6C	guard cell	AT2G39850-SBT4.1	companion cell	AT3G27690-LHCB2.4	mesophyll cell
AT1G54050-HSP17.4B	guard cell	AT1G24575-AT1G24575	companion cell	AT2G10940-AT2G10940	mesophyll cell
AT3G49780-PSK3	guard cell	AT1G67865-AT1G67865	companion cell	AT2G39010-PIP2-6	mesophyll cell
AT3G24500-MBF1C	guard cell	AT2G16740-UBC29	companion cell	AT5G48490-AT5G48490	mesophyll cell
AT5G48570-FKBP65	guard cell	AT2G32870-AT2G32870	companion cell	AT5G64040-PSAN	mesophyll cell
AT5G52640-HSP90-1	guard cell	AT5G42980-TRX3	companion cell	AT4G28310-AT4G28310	mesophyll cell
AT3G09350-Fes1A	guard cell	AT5G45350-AT5G45350	companion cell	AT3G27060-TSO2	mesophyll cell
AT1G33811-AT1G33811	guard cell	AT4G16008-AT4G16008	companion cell	AT1G67090-RBCS-1A	mesophyll cell
AT4G11600-GPX6	guard cell	AT1G22710-SUC2	companion cell	AT5G38410-AT5G38410	mesophyll cell
AT1G07400-HSP17.8	guard cell	AT5G57350-AHA3	companion cell	AT2G39470-PNSL1	mesophyll cell
AT1G16030-HSP70-5	guard cell	AT1G07590-AT1G07590	companion cell	AT4G19690-IRT1	anther
AT3G24140-FAMA	guard cell	AT1G07640-OBP2	phloem	AT1G44542-CYCLASE3	anther
AT2G20875-EPF1	guard cell	AT5G62940-DOF5.6	phloem	AT5G53190-SWEET3	anther
AT1G08810-MYB60	guard cell	AT3G45610-DOF3.2	phloem	AT2G45580-CYP76C3	anther
AT4G17970-ALMT12	guard cell	AT5G19260-FAF3	phloem	AT1G72290-WSCP	carpel
AT5G65590-DOF5.7	guard cell	AT2G22330-CYP79B3	phloem	AT4G38000-DOF4.7	carpel
		AT3G28455-CLE25	phloem	AT1G02800-CEL2	carpel
		AT4G36710-SCL15	phloem	AT5G09750-HEC3	carpel
		AT5G57130-SMXL5	phloem	AT1G44970-PER9	stigmatic tissue
		AT3G01680-SEOB	sieve element	AT2G02850-ARPN	stigmatic tissue
		AT3G01670-AT3G01670	sieve element	AT1G53130-GRI	stigmatic tissue
		AT1G77110-PIN6	xylem	AT1G25330-BHLH75	stigmatic tissue
		AT5G61480-TDR	xylem	AT4G23690-DIR6	stigmatic tissue
		AT3G25710-BHLH32	xylem	AT3G01530-MYB57	stigmatic tissue
		AT5G19530-ACL5	xylem	AT1G06520-GPAT1	stigmatic tissue
		AT1G68810-BHLH30	xylem	AT1G55020-LOX1	stigmatic tissue
		AT1G20850-XCP2	tracheary element	AT3G03670-PER28	stigmatic tissue
		AT4G35350-XCP1	tracheary element	AT5G20820-SAUR76	stigmatic tissue
				AT3G24225-CLE19	stigmatic tissue

Table S5 | Cell cycle marker genes.

Gene	Phase	Gene	Phase	Gene	Phase
AT1G12845-AT1G12845	G1/G0	AT4G15830-AT4G15830	G2	AT4G31840-ENODL15	M
AT3G26960-AT3G26960	G1/G0	AT3G27330-AT3G27330	G2	AT5G16250-AT5G16250	M
AT5G02260-EXPA9	G1/G0	AT4G05190-KIN14D	G2	AT2G25060-ENODL14	M
AT1G33930-IAN6	G1/G0	AT1G16630-AT1G16630	G2	AT5G25090-ENODL13	M
AT5G01445-AT5G01445	G1/G0	AT2G33560-BUBR1	G2	AT3G02640-AT3G02640	M
AT5G67260-CYCD3;2	G1/G0	AT1G76540-CDKB2-1	G2	AT1G08560-KN	M
AT2G34510-AT2G34510	G1/G0	AT2G27970-CKS2	G2	AT3G59765-AT3G59765	M
AT2G30420-ETC2	G1/G0	AT3G23890-TOP2	G2	AT1G50490-UBC20	M
AT4G34160-CYCD3-1	G1/G0	AT1G44110-CYCA1-1	G2	AT1G31335-AT1G31335	M
AT4G16141-AT4G16141	G1/G0	AT1G02690-IMPA-6	G2	AT3G02120-AT3G02120	M
AT2G18876-AT2G18876	G1/G0	AT1G20930-CDKB2-2	G2	AT4G33270-CDC20-1	M
AT5G11550-AT5G11550	G1/G0	AT3G03130-AT3G03130	G2	AT4G02800-AT4G02800	M
AT2G29570-PCNA2	G1/G0	AT5G17160-AT5G17160	G2	AT5G56120-AT5G56120	M
AT3G46940-DUT1	G1/G0	AT4G03100-ROPAP2	G2	AT3G52110-AT3G52110	M
AT1G80080-TMM	G1/G0	AT5G60930-AT5G60930	G2	AT3G14190-PANS1	M
AT3G62070-AT3G62070	G1/G0	AT1G61450-AT1G61450	G2	AT3G51720-AT3G51720	M
AT1G07370-PCNA	G1/G0	AT1G53140-DRP5A	G2	AT1G63100-SCL28	M
AT4G02060-MCM7	G1/G0	AT1G72670-icq8	G2	AT5G13840-FZR3	M
AT5G10400-HTR2	S	AT5G42720-AT5G42720	G2	AT2G42110-AT2G42110	M
AT5G22880-H2B	S	AT4G11080-HMGB13	G2	AT4G35730-AT4G35730	M
AT5G59870-HTA6	S	AT4G01730-PAT18	G2	AT4G32830-AUR1	M
AT5G59690-AT5G59690	S	AT2G33793-AT2G33793	G2	AT5G44040-AT5G44040	M
AT5G65360-HTR2	S	AT5G37010-AT5G37010	G2	AT3G51740-IMK2	M
AT1G09200-HTR2	S	AT3G01710-AT3G01710	G2	AT1G18370-KIN7A	M
AT3G27360-HTR2	S	AT5G55520-AT5G55520	G2	AT2G34190-NAT2	M
AT1G07820-AT1G07820	S	AT3G23670-KIN12B	G2	AT3G05330-TAN	M
AT3G20670-HTA13	S	AT4G21270-KIN14C	G2	AT5G15510-AT5G15510	M
AT1G51060-HTA10	S	AT5G51600-MAP65-3	G2	AT4G33260-CDC20-2	M
AT3G45930-AT3G45930	S	AT3G20150-KIN12F	G2	AT3G54710-CDT1B	M
AT3G46030-HTB11	S	AT4G13370-AT4G13370	G2	AT3G51230-AT3G51230	M
AT3G45980-H2B	S	AT2G47920-NET3C	G2	AT1G78865-AT1G78865	M
AT5G59970-AT5G59970	S	AT3G44050-KIN12E	G2	AT3G60900-FLA10	M
AT5G10390-HTR2	S	AT1G21810-FPP2	G2	AT1G49870-AT1G49870	M
AT1G08880-HTA5	S	AT1G05440-AT1G05440	G2	AT5G48310-AT5G48310	M
AT3G46320-AT3G46320	S	AT1G72250-AT1G72250	G2	AT5G38300-AT5G38300	M
AT1G06760-AT1G06760	S	AT5G23910-AT5G23910	G2	AT4G17000-AT4G17000	M
AT5G59910-HTB4	S	AT3G17680-AT3G17680	G2	AT2G37390-NAKR2	M
AT3G53730-AT3G53730	S	AT1G59540-KIN7N	G2	AT5G44560-VPS2.2	M
AT1G07790-HTB1	S	AT1G78430-ICR4	G2	AT5G47500-PME68	M
AT5G27670-HTA7	S	AT1G04760-VAMP726	G2	AT3G25980-MAD2	M
AT4G27230-HTA2	S	AT5G11510-MYB3R4	G2	AT3G11520-CYCB1-3	M
AT2G28740-HIS4	S	AT4G37490-CYCB1-1	G2	AT2G25880-AtAUR2	M
AT3G54560-H2AV	S	AT1G65710-AT1G65710	G2	AT5G03870-AT5G03870	M
AT2G37470-AT2G37470	S	AT3G60840-MAP65-4	G2	AT1G02730-CSLD5	M
AT3G53650-AT3G53650	S	AT5G62550-AT5G62550	G2	AT1G20030-AT1G20030	M
AT5G63550-AT5G63550	S	AT3G58650-AT3G58650	G2	AT1G04425-AT1G04425	M
AT1G14900-HMGA	S	AT3G10310-AT3G10310	G2	AT1G03470-NET3A	M
AT5G54640-RAT5	S	AT2G45490-AUR3	G2	AT2G33400-AT2G33400	M
AT1G54690-HTA3	S	AT5G27550-KIN14S	G2	AT5G66230-AT5G66230	M
AT3G54750-AT3G54750	S	AT4G38062-AT4G38062	G2	AT3G53380-LECRK81	M
AT1G01370-HTR12	S	AT5G18700-RUK	G2	AT5G55180-AT5G55180	M
AT3G27060-TSO2	S	AT1G34355-PS1	G2	AT1G30690-PATL4	M
AT3G07800-TK1A	S	AT1G20610-CYCB2-3	G2	AT1G23790-AT1G23790	M
AT2G38810-HTA8	S	AT2G22610-AT2G22610	G2	AT1G03780-TPX2	M
AT1G47210-CYCA3-2	S	AT1G80370-CYCA2-4	G2	AT3G12870-AT3G12870	M
AT5G65350-HTR11	S	AT4G05520-EHD2	G2	AT2G26760-CYCB1-4	M
AT1G57820-ORTH2	S	AT2G47500-KIN14I	G2	AT5G05080-UBC22	M
AT5G38690-AT5G38690	S	AT3G19590-BUB3.1	G2	AT4G14330-KIN10A	M
AT3G18035-HON4	S	AT4G33400-AT4G33400	G2	AT5G02490-MED37D	M
AT5G23420-HMGB7	S	AT2G36200-AT2G36200	G2	AT4G28230-AT4G28230	M
AT5G49160-DMT1	S	AT3G19050-KIN12D	G2	AT3G56100-MRLK	M
AT3G14740-AT3G14740	S	AT2G38160-AT2G38160	G2	AT4G35620-CYCB2-2	M
AT1G69770-CMT3	S	AT5G48460-FIM2	G2	AT3G07320-AT3G07320	M
AT5G61000-RPA1D	S	AT3G17360-POK1	G2	AT2G19620-NDL3	M
AT1G04020-ATBAR1	S	AT1G09815-POLD4	G2	AT4G22120-CSC1	M
AT5G48600-ATSMC3	S	AT1G10780-AT1G10780	G2	AT1G76310-CYCB2;4	M
AT2G21790-RNR1	S	AT5G42330-AT5G42330	G2	AT3G18800-AT3G18800	M
AT2G28720-AT2G28720	S	AT5G60150-AT5G60150	G2	AT3G55660-ROPGEF6	M
AT1G80450-VQ11	S	AT1G01690-ATPRD3	G2	AT2G16270-AT2G16270	M
AT3G52630-RPA3A	S	AT1G50240-TIO	G2	AT5G45700-AT5G45700	M
AT4G28310-AT4G28310	S	AT3G01410-AT3G01410	G2	AT4G12870-AT4G12870	M
AT5G63950-CHR24	G2	AT5G42700-AT5G42700	G2	AT3G58100-PDCB5	M
AT3G23910-AT3G23910	G2	AT1G35780-AT1G35780	G2	AT3G22880-DMC1	M
AT1G23000-AT1G23000	G2	AT3G54180-CDKB1-1	G2	AT1G66250-AT1G66250	M
AT4G14310-AT4G14310	G2	AT4G17240-AT4G17240	G2	AT3G14760-AT3G14760	M
AT1G15660-CENP-C	G2	AT3G57860-GIG1	G2	AT4G23800-HMGB6	M
AT3G23730-XTH16	G2	AT5G56580-MKK6	G2	AT5G67270-EB1C	M
AT2G28620-AT2G28620	G2	AT4G02150-IMPA3	G2		
AT3G15550-AT3G15550	G2	AT3G57060-AT3G57060	G2		
AT3G51280-AT3G51280	G2	AT2G20635-BUB1	G2		
AT5G06150-CYCB1-2	G2	AT2G07170-TOR1L2	G2		
AT4G26660-AT4G26660	G2	AT2G38620-CDKB1-2	G2		
AT4G09060-AT4G09060	G2	AT1G54385-SINE1	G2		

Table S6 | Lineage-specific DEGs in flower or leaf cells.

Tissue	Lineage	Gene	p_val	avg_log2FC	pct.1	pct.2	p_val_adj
Flower	Ln-l	AT3G43720-LTPG2	3.11E-256	1.809395562	0.735	0.18	7.91E-252
Flower	Ln-l	AT1G01120-KCS1	8.34E-251	2.106646377	0.729	0.184	2.12E-246
Flower	Ln-l	AT5G25610-RD22	5.29E-222	1.593635394	0.541	0.085	1.34E-217
Flower	Ln-l	AT4G21750-ATML1	5.60E-203	0.718191296	0.413	0.039	1.42E-198
Flower	Ln-l	AT3G23560-DTX19	1.65E-197	0.733054005	0.429	0.047	4.18E-193
Flower	Ln-l	AT2G26250-FDH	1.70E-189	1.162515264	0.467	0.066	4.33E-185
Flower	Ln-l	AT5G41810-AT5G41810	7.62E-178	0.993324747	0.545	0.115	1.94E-173
Flower	Ln-l	AT1G02205-CER1	1.07E-167	0.807672526	0.344	0.032	2.72E-163
Flower	Ln-l	AT1G27950-LTPG1	1.71E-159	1.735432693	0.729	0.312	4.35E-155
Flower	Ln-l	AT1G79160-AT1G79160	2.19E-157	1.282587268	0.761	0.304	5.57E-153
Flower	Ln-l	AT5G28630-AT5G28630	2.83E-155	0.904993399	0.27	0.015	7.19E-151
Flower	Ln-l	AT5G18460-AT5G18460	4.89E-147	0.630810897	0.325	0.035	1.24E-142
Flower	Ln-l	AT2G38540-LTP1	5.73E-147	2.88703418	0.86	0.626	1.46E-142
Flower	Ln-l	AT2G27385-AT2G27385	1.10E-141	1.203381604	0.376	0.057	2.80E-137
Flower	Ln-l	AT2G42840-PDF1	1.72E-141	1.280589073	0.328	0.039	4.38E-137
Flower	Ln-l	AT4G18970-AT4G18970	3.73E-137	0.791102357	0.292	0.028	9.49E-133
Flower	Ln-l	AT4G23680-AT4G23680	3.11E-134	2.176856589	0.561	0.195	7.91E-130
Flower	Ln-l	AT2G32690-GRP23	6.59E-129	0.825937404	0.323	0.042	1.68E-124
Flower	Ln-l	AT4G33220-PME44	2.07E-127	0.593090981	0.278	0.028	5.26E-123
Flower	Ln-l	AT2G16630-AT2G16630	2.11E-127	0.932339201	0.381	0.071	5.36E-123
Flower	Ln-l	AT3G16370-APG	7.34E-124	0.705343885	0.287	0.032	1.87E-119
Flower	Ln-l	AT3G02110-SCPL25	6.54E-123	0.517234585	0.294	0.035	1.66E-118
Flower	Ln-l	AT4G21620-AT4G21620	9.50E-121	1.219545953	0.446	0.109	2.41E-116
Flower	Ln-l	AT2G46140-AT2G46140	4.17E-118	0.968606593	0.495	0.143	1.06E-113
Flower	Ln-l	AT4G01950-ATGPAT3	9.65E-113	1.082267919	0.291	0.041	2.45E-108
Flower	Ln-l	AT5G22500-FAR1	4.18E-107	1.131241335	0.286	0.043	1.06E-102
Flower	Ln-l	AT5G43760-KCS20	3.65E-101	1.298232468	0.672	0.354	9.29E-97
Flower	Ln-l	AT1G10060-ATBCAT-1	8.85E-101	0.817257633	0.255	0.034	2.25E-96
Flower	Ln-l	AT1G70830-MLP28	8.66E-100	1.525352483	0.315	0.061	2.20E-95
Flower	Ln-l	AT5G62470-MYB96	7.39E-99	1.016886928	0.425	0.12	1.88E-94
Flower	Ln-l	AT4G23670-AT4G23670	4.25E-95	1.067801615	0.316	0.063	1.08E-90
Flower	Ln-l	AT2G32210-AT2G32210	1.38E-94	1.349542111	0.896	0.766	3.51E-90
Flower	Ln-l	AT1G79360-OCT2	3.06E-94	0.517872247	0.299	0.056	7.77E-90
Flower	Ln-l	AT1G09310-AT1G09310	5.29E-91	1.650014618	0.488	0.188	1.35E-86
Flower	Ln-l	AT4G18910-NIP1-2	4.03E-89	1.180554781	0.521	0.217	1.02E-84
Flower	Ln-l	AT2G39400-AT2G39400	4.06E-89	1.989661951	0.589	0.285	1.03E-84
Flower	Ln-l	AT5G22270-AT5G22270	2.57E-84	1.440826078	0.45	0.164	6.53E-80
Flower	Ln-l	AT4G14746-AT4G14746	3.06E-84	0.595009492	0.266	0.05	7.79E-80
Flower	Ln-l	AT3G10720-PME25	4.52E-83	0.99188181	0.532	0.227	1.15E-78
Flower	Ln-l	AT1G22890-AT1G22890	7.72E-83	0.68300492	0.323	0.077	1.96E-78
Flower	Ln-l	AT4G30470-AT4G30470	1.53E-81	0.624192453	0.325	0.081	3.89E-77
Flower	Ln-l	AT2G29420-GSTU7	1.13E-80	0.908124491	0.937	0.87	2.88E-76
Flower	Ln-l	AT4G36500-AT4G36500	2.77E-80	1.105831912	0.929	0.836	7.04E-76
Flower	Ln-l	AT3G20470-GRP5	2.87E-79	1.198111476	0.278	0.059	7.30E-75
Flower	Ln-l	AT2G32200-AT2G32200	6.68E-76	1.008808901	0.509	0.223	1.70E-71
Flower	Ln-l	AT2G26190-IQM4	1.49E-75	1.386847711	0.497	0.215	3.78E-71
Flower	Ln-l	AT1G56580-SVB	6.44E-75	1.413094856	0.602	0.333	1.64E-70
Flower	Ln-l	AT4G24130-AT4G24130	1.22E-74	0.57631426	0.255	0.051	3.11E-70
Flower	Ln-l	AT1G67560-LOX6	2.37E-68	0.608513019	0.444	0.173	6.02E-64
Flower	Ln-l	AT5G20050-AT5G20050	6.31E-67	0.922823264	0.517	0.259	1.61E-62
Flower	Ln-l	ATMG00020-RRN26	6.59E-66	0.765073954	0.997	0.995	1.67E-61
Flower	Ln-l	AT1G69890-AT1G69890	3.63E-63	0.755455839	0.561	0.279	9.22E-59
Flower	Ln-l	AT3G24420-AT3G24420	4.42E-60	2.32238711	0.389	0.165	1.12E-55
Flower	Ln-l	AT3G28910-MYB30	1.42E-58	1.035100143	0.438	0.189	3.61E-54
Flower	Ln-l	AT3G53232-RTFL1	6.11E-56	0.692201677	0.324	0.111	1.55E-51
Flower	Ln-l	AT1G66400-CML23	8.71E-56	0.6836636	0.319	0.104	2.21E-51
Flower	Ln-l	AT2G39350-ABCG1	1.11E-53	1.09555352	0.743	0.576	2.82E-49
Flower	Ln-l	AT3G18560-AT3G18560	1.96E-50	1.160423832	0.452	0.221	4.99E-46
Flower	Ln-l	AT2G43590-AT2G43590	2.19E-50	1.514331201	0.683	0.489	5.57E-46
Flower	Ln-l	AT5G44020-AT5G44020	2.79E-50	1.621025141	0.259	0.081	7.08E-46
Flower	Ln-l	AT1G78830-AT1G78830	1.78E-49	0.729225458	0.475	0.235	4.52E-45
Flower	Ln-l	AT2G07708-AT2G07708	4.74E-49	0.648044104	0.791	0.632	1.20E-44
Flower	Ln-l	AT2G07671-AT2G07671	6.28E-49	0.791990079	0.841	0.762	1.60E-44
Flower	Ln-l	AT2G19460-AT2G19460	8.70E-49	0.710174708	0.481	0.242	2.21E-44
Flower	Ln-l	AT3G26200-CYP71B22	5.75E-47	0.699679559	0.267	0.086	1.46E-42
Flower	Ln-l	AT5G06320-NHL3	8.35E-47	0.650241132	0.888	0.815	2.12E-42
Flower	Ln-l	AT5G23940-DCR	3.82E-46	0.626501699	0.313	0.123	9.70E-42
Flower	Ln-l	AT4G31550-WRKY11	2.68E-45	0.681685199	0.921	0.852	6.80E-41
Flower	Ln-l	AT1G33600-AT1G33600	1.16E-44	0.730395122	0.587	0.365	2.94E-40

Flower	Ln-I	AT4G15760-MO1	8.56E-44	0.980028435	0.34	0.141	2.18E-39
Flower	Ln-I	AT2G32190-AT2G32190	1.83E-43	0.837598709	0.913	0.852	4.66E-39
Flower	Ln-I	AT2G23120-AT2G23120	1.32E-41	0.528980873	0.864	0.768	3.36E-37
Flower	Ln-I	AT3G10960-AZG1	3.05E-41	0.722138451	0.614	0.431	7.76E-37
Flower	Ln-I	AT3G08970-ERDJ3A	3.78E-41	0.657408736	0.796	0.669	9.61E-37
Flower	Ln-I	AT3G25780-AOC3	9.10E-38	0.668355201	0.77	0.587	2.31E-33
Flower	Ln-I	AT5G45340-CYP707A3	1.28E-37	0.546659857	0.294	0.12	3.26E-33
Flower	Ln-I	AT4G22690-CYP706A1	1.48E-35	0.878383138	0.28	0.117	3.77E-31
Flower	Ln-I	AT5G55180-AT5G55180	9.97E-34	1.050805957	0.898	0.865	2.53E-29
Flower	Ln-I	AT1G33590-AT1G33590	1.41E-33	0.652099398	0.806	0.699	3.59E-29
Flower	Ln-I	AT2G07727-AT2G07727	4.62E-33	0.522688398	0.808	0.705	1.17E-28
Flower	Ln-I	AT5G03380-HIPP06	7.21E-33	0.609452935	0.984	0.959	1.83E-28
Flower	Ln-I	ATMG00090-ATMG00090	2.83E-32	0.517269459	0.918	0.871	7.20E-28
Flower	Ln-I	AT2G38470-WRKY33	1.16E-31	0.650989928	0.802	0.682	2.94E-27
Flower	Ln-I	AT2G47485-AT2G47485	1.42E-31	0.558295059	0.413	0.229	3.60E-27
Flower	Ln-I	AT4G18280-AT4G18280	6.77E-31	0.672618489	0.456	0.262	1.72E-26
Flower	Ln-I	AT1G71030-ATMYBL2	1.16E-30	0.887388919	0.566	0.414	2.95E-26
Flower	Ln-I	AT5G60800-AT5G60800	1.91E-29	0.692736944	0.583	0.422	4.84E-25
Flower	Ln-I	AT1G64200-VHA-E3	3.33E-29	0.517707481	0.684	0.524	8.46E-25
Flower	Ln-I	AT4G20830-AT4G20830	1.77E-28	0.861911155	0.898	0.882	4.50E-24
Flower	Ln-I	AT5G42380-CML37	3.99E-28	0.934983932	0.892	0.879	1.01E-23
Flower	Ln-I	AT5G54940-AT5G54940	4.41E-28	0.554252461	0.987	0.983	1.12E-23
Flower	Ln-I	AT1G03220-AT1G03220	7.14E-28	1.037521033	0.903	0.85	1.82E-23
Flower	Ln-I	AT5G22250-CAF1-11	2.19E-27	0.518042696	0.56	0.389	5.57E-23
Flower	Ln-I	AT3G09570-AT3G09570	3.16E-27	0.602043472	0.786	0.715	8.03E-23
Flower	Ln-I	AT2G16900-AT2G16900	3.47E-27	0.509399838	0.886	0.847	8.81E-23
Flower	Ln-I	AT3G10930-AT3G10930	1.12E-26	0.720137407	0.631	0.485	2.85E-22
Flower	Ln-I	AT5G03210-AT5G03210	1.76E-26	0.887930748	0.771	0.657	4.47E-22
Flower	Ln-I	AT4G16820-PLA-I[beta]2	1.82E-26	0.764398899	0.532	0.377	4.62E-22
Flower	Ln-II	AT4G34620-RPS16-1	1.08E-85	0.801527495	0.892	0.772	2.76E-81
Flower	Ln-II	AT4G24770-CP31A	1.71E-82	0.87512617	0.74	0.488	4.34E-78
Flower	Ln-II	AT3G26650-GAPA1	8.41E-80	0.954608736	0.841	0.666	2.14E-75
Flower	Ln-II	AT1G05190-RPL6	1.85E-76	0.712642234	0.663	0.375	4.70E-72
Flower	Ln-II	AT1G37130-NIA2	1.35E-75	0.880856661	0.621	0.318	3.42E-71
Flower	Ln-II	ATCG00720-PETB	3.15E-75	0.939857771	0.925	0.879	8.00E-71
Flower	Ln-II	AT3G14420-GLO1	2.60E-74	0.834596326	0.52	0.208	6.60E-70
Flower	Ln-II	ATCG00490-RBCL	9.12E-74	1.075599307	0.942	0.897	2.32E-69
Flower	Ln-II	AT1G23310-GGAT1	3.14E-71	0.82709725	0.666	0.402	7.97E-67
Flower	Ln-II	AT4G03280-PETC	1.81E-70	0.872412803	0.723	0.495	4.59E-66
Flower	Ln-II	AT1G79040-PSBR	7.54E-70	1.032113006	0.921	0.812	1.92E-65
Flower	Ln-II	AT1G74970-RPS9	1.42E-68	0.687819296	0.683	0.415	3.60E-64
Flower	Ln-II	AT5G65220-RPL29	1.02E-65	0.743721045	0.732	0.517	2.59E-61
Flower	Ln-II	AT2G13360-AGT1	7.58E-65	0.831803599	0.546	0.263	1.93E-60
Flower	Ln-II	AT3G51660-AT3G51660	1.67E-56	0.986524299	0.711	0.521	4.24E-52
Flower	Ln-II	ATCG00040-MATK	3.24E-56	0.784187342	0.842	0.737	8.25E-52
Flower	Ln-II	AT1G68010-HPR	5.66E-56	0.638403906	0.514	0.249	1.44E-51
Flower	Ln-II	AT5G35630-GLN2	6.18E-56	0.644534837	0.599	0.344	1.57E-51
Flower	Ln-II	ATCG00680-PSBB	5.51E-55	0.837383755	0.951	0.921	1.40E-50
Flower	Ln-II	ATCG01070-NDHE	8.46E-55	0.634400353	0.717	0.505	2.15E-50
Flower	Ln-II	AT1G31330-PSAF	3.75E-54	0.759861436	0.85	0.726	9.54E-50
Flower	Ln-II	AT1G32470-GDH3	5.50E-54	0.570642151	0.528	0.269	1.40E-49
Flower	Ln-II	AT1G20340-DRT112	6.08E-53	0.763132177	0.794	0.63	1.54E-48
Flower	Ln-II	AT4G01150-CURT1A	4.71E-52	0.808015083	0.606	0.374	1.20E-47
Flower	Ln-II	AT5G38410-AT5G38410	1.85E-51	0.977059149	0.739	0.556	4.69E-47
Flower	Ln-II	AT3G54890-LHCA1	4.63E-51	0.691410836	0.882	0.795	1.18E-46
Flower	Ln-II	AT3G61470-LHCA2	5.76E-51	0.859275672	0.755	0.591	1.46E-46
Flower	Ln-II	AT3G27850-RPL12C	1.69E-50	0.649086162	0.59	0.355	4.31E-46
Flower	Ln-II	AT2G26500-AT2G26500	2.68E-50	0.758007038	0.683	0.471	6.81E-46
Flower	Ln-II	AT1G67090-RBCS-1A	3.17E-50	1.014757351	0.922	0.841	8.07E-46
Flower	Ln-II	AT3G25920-RPL15	1.10E-49	0.563067968	0.562	0.328	2.80E-45
Flower	Ln-II	ATCG01050-NDHD	1.46E-49	0.531722209	0.851	0.726	3.72E-45
Flower	Ln-II	AT5G61410-RPE	2.40E-49	0.548626065	0.656	0.447	6.11E-45
Flower	Ln-II	AT1G05680-UGT74E2	2.64E-49	0.693933692	0.631	0.396	6.72E-45
Flower	Ln-II	AT5G54770-THI1	6.72E-48	0.821362233	0.526	0.288	1.71E-43
Flower	Ln-II	AT4G38970-FBA2	8.13E-48	0.855409231	0.568	0.337	2.07E-43
Flower	Ln-II	AT3G62030-ROC4	3.29E-47	0.678693656	0.488	0.255	8.35E-43
Flower	Ln-II	AT1G42970-GAPB	1.02E-45	0.677669623	0.53	0.293	2.60E-41
Flower	Ln-II	AT2G45740-PEX11D	3.28E-45	0.516734488	0.588	0.372	8.33E-41
Flower	Ln-II	AT4G21280-PSBQ1	4.54E-45	0.683295443	0.65	0.446	1.15E-40
Flower	Ln-II	ATCG00380-RPS4	6.33E-45	0.556168598	0.937	0.908	1.61E-40
Flower	Ln-II	ATCG01130-YCF1.2	1.11E-44	0.677741623	0.861	0.77	2.83E-40
Flower	Ln-II	AT2G28190-CSD2	1.92E-44	0.688410099	0.62	0.425	4.88E-40

Flower	Ln-II	ATCG00350-PSAA	2.34E-44	0.597975908	0.663	0.471	5.95E-40
Flower	Ln-II	ATCG00340-PSAB	3.73E-44	0.546820006	0.841	0.734	9.48E-40
Flower	Ln-II	AT3G14660-CYP72A13	2.17E-43	0.53577827	0.549	0.318	5.52E-39
Flower	Ln-II	AT4G37980-CAD7	9.38E-43	0.770865886	0.51	0.296	2.38E-38
Flower	Ln-II	AT4G32260-AT4G32260	5.42E-42	0.661685753	0.589	0.38	1.38E-37
Flower	Ln-II	ATCG00580-PSBE	4.22E-41	0.573741497	0.834	0.745	1.07E-36
Flower	Ln-II	ATCG00020-PSBA	1.69E-40	0.902090891	0.99	0.987	4.30E-36
Flower	Ln-II	AT2G01610-AT2G01610	1.81E-40	0.644052535	0.479	0.256	4.59E-36
Flower	Ln-II	ATCG00470-ATPE	4.40E-40	0.650777894	0.878	0.805	1.12E-35
Flower	Ln-II	AT4G10340-LHCB5	3.25E-39	0.663095515	0.802	0.665	8.26E-35
Flower	Ln-II	AT2G39730-RCA	7.37E-39	0.797556914	0.703	0.537	1.87E-34
Flower	Ln-II	ATCG00280-PSBC	1.31E-38	0.568383949	0.739	0.586	3.34E-34
Flower	Ln-II	AT2G39010-PIP2-6	5.06E-37	0.669941337	0.366	0.163	1.29E-32
Flower	Ln-II	AT1G61520-LHCA3	7.40E-37	0.615546771	0.806	0.674	1.88E-32
Flower	Ln-II	AT2G46820-CURT1B	1.47E-36	0.616177798	0.496	0.293	3.74E-32
Flower	Ln-II	AT5G48180-NSP5	3.71E-36	0.680903697	0.974	0.95	9.42E-32
Flower	Ln-II	AT1G29910-LHCB1.1	5.36E-36	0.780957062	0.433	0.233	1.36E-31
Flower	Ln-II	AT2G30570-PSBW	1.96E-35	0.617657713	0.746	0.585	4.99E-31
Flower	Ln-II	AT3G11630-BAS1	3.25E-35	0.535346907	0.483	0.282	8.26E-31
Flower	Ln-II	AT5G01530-LHCB4.1	1.11E-34	0.576558092	0.837	0.745	2.82E-30
Flower	Ln-II	AT1G30380-PSAK	1.17E-34	0.55903275	0.564	0.379	2.97E-30
Flower	Ln-II	AT5G66570-PSBO1	1.27E-34	0.687867735	0.682	0.513	3.24E-30
Flower	Ln-II	AT1G29920-LHCB1.1	1.85E-33	0.891020593	0.541	0.342	4.71E-29
Flower	Ln-II	AT3G47470-LHCA4	3.82E-33	0.652987425	0.878	0.792	9.70E-29
Flower	Ln-II	AT4G12800-PSAL	1.43E-32	0.557164622	0.724	0.583	3.64E-28
Flower	Ln-II	AT2G36800-UGT73C5	1.85E-32	0.502615267	0.38	0.188	4.70E-28
Flower	Ln-II	AT1G78630-RPL13	7.35E-31	0.521150757	0.451	0.268	1.87E-26
Flower	Ln-II	AT1G44575-PSBS	1.18E-27	0.560921613	0.59	0.421	3.01E-23
Flower	Ln-II	AT1G15820-LHCB6	6.03E-27	0.508080202	0.63	0.466	1.53E-22
Flower	Ln-II	AT3G28740-CYP81D11	8.99E-27	0.587182684	0.819	0.724	2.29E-22
Flower	Ln-II	AT2G34420-LHB1B2	3.94E-26	0.649067739	0.838	0.744	1.00E-21
Flower	Ln-II	ATCG00130-ATPF	9.22E-26	0.509666949	0.844	0.761	2.34E-21
Flower	Ln-II	AT1G55670-PSAG	1.27E-25	0.508845085	0.637	0.48	3.24E-21
Flower	Ln-II	AT2G30490-CYP73A5	1.63E-25	0.503895527	0.929	0.884	4.15E-21
Flower	Ln-II	AT2G17720-P4H5	2.13E-25	0.507524001	0.659	0.523	5.40E-21
Flower	Ln-II	AT4G28750-PSAE1	1.07E-23	0.503722578	0.619	0.481	2.73E-19
Flower	Ln-II	ATCG00440-NDHC	5.54E-22	0.806312006	0.634	0.506	1.41E-17
Flower	Ln-II	AT3G25220-FKBP15-1	2.65E-21	0.510977261	0.771	0.67	6.74E-17
Flower	Ln-II	AT4G22470-AT4G22470	3.68E-21	0.720717118	0.323	0.186	9.34E-17
Flower	Ln-II	AT3G53420-PIP2-1	2.71E-19	0.615840359	0.51	0.37	6.89E-15
Flower	Ln-II	AT2G36830-TIP1-1	3.87E-18	0.54725459	0.648	0.524	9.84E-14
Flower	Ln-II	AT2G43620-AT2G43620	1.96E-16	0.527591009	0.409	0.276	4.97E-12
Flower	Ln-II	AT2G39518-AT2G39518	1.89E-14	0.652151532	0.28	0.175	4.81E-10
Flower	Ln-II	AT4G34050-CCoAOMT1	5.55E-14	0.581518448	0.493	0.368	1.41E-09
Flower	Ln-II	AT5G22580-AT5G22580	1.48E-12	0.8309989	0.759	0.721	3.76E-08
Flower	Ln-II	AT3G04300-AT3G04300	1.49E-11	0.544743052	0.38	0.276	3.77E-07
Flower	Ln-II	AT3G23250-MYB15	1.70E-09	0.529969268	0.554	0.476	4.32E-05
Flower	Ln-II	AT1G29930-LHCB1.3	1.93E-09	0.542867263	0.795	0.748	4.89E-05
Flower	Ln-II	AT1G02930-GSTF6	5.31E-08	0.558551134	0.556	0.5	0.0013485
Flower	Ln-III	AT1G62360-STM	1.22E-73	0.648508357	0.306	0.05	3.11E-69
Flower	Ln-III	AT3G13650-DIR7	2.40E-41	1.348435707	0.351	0.112	6.11E-37
Flower	Ln-III	AT4G37730-AtbZIP7	1.06E-33	0.786590029	0.415	0.165	2.71E-29
Flower	Ln-III	AT3G28600-AT3G28600	1.06E-27	1.222153325	0.326	0.124	2.69E-23
Flower	Ln-III	AT1G80520-AT1G80520	2.63E-27	1.355163612	0.493	0.258	6.70E-23
Flower	Ln-III	AT1G21830-AT1G21830	1.39E-26	0.720416267	0.816	0.595	3.54E-22
Flower	Ln-III	AT5G57685-GDU3	3.59E-25	0.943615496	0.373	0.163	9.13E-21
Flower	Ln-III	AT4G24060-DOF4.6	1.79E-24	0.707796543	0.404	0.19	4.55E-20
Flower	Ln-III	AT3G53620-PPA4	3.38E-24	0.623303551	0.674	0.434	8.60E-20
Flower	Ln-III	AT3G13660-DIR22	1.07E-22	0.61397591	0.362	0.164	2.71E-18
Flower	Ln-III	AT4G00940-DOF4.1	4.91E-22	0.744486664	0.284	0.112	1.25E-17
Flower	Ln-III	AT1G72520-LOX4	1.29E-19	0.556717662	0.51	0.294	3.28E-15
Flower	Ln-III	AT5G19875-AT5G19875	2.23E-19	0.571414237	0.387	0.2	5.66E-15
Flower	Ln-III	AT3G43250-AT3G43250	4.95E-19	0.526702688	0.276	0.115	1.26E-14
Flower	Ln-III	AT1G45145-TRX5	2.00E-18	0.75708675	0.802	0.668	5.08E-14
Flower	Ln-III	AT5G13880-AT5G13880	1.05E-17	0.634424178	0.362	0.182	2.68E-13
Flower	Ln-III	AT4G34230-CAD5	7.63E-17	0.570681648	0.961	0.92	1.94E-12
Flower	Ln-III	AT5G02380-MT2B	8.14E-17	2.331578845	0.919	0.874	2.07E-12
Flower	Ln-III	AT3G55970-JRG21	9.85E-17	0.868832954	0.351	0.184	2.50E-12
Flower	Ln-III	AT1G26920-AT1G26920	1.85E-16	0.628837348	0.39	0.214	4.71E-12
Flower	Ln-III	AT5G46590-anac096	1.99E-16	0.658103273	0.329	0.162	5.06E-12
Flower	Ln-III	AT4G09030-AGP10	3.70E-16	0.720313995	0.691	0.513	9.41E-12
Flower	Ln-III	AT5G43620-PCFS5	8.84E-16	0.650664998	0.643	0.457	2.25E-11

Flower	Ln-III	AT2G16700-ADF5	1.00E-14	0.529778491	0.513	0.346	2.54E-10
Flower	Ln-III	AT4G37610-BT5	1.81E-14	0.837903892	0.649	0.499	4.59E-10
Flower	Ln-III	AT3G22910-ACA13	3.43E-13	0.661758156	0.496	0.323	8.73E-09
Flower	Ln-III	AT2G37180-PIP2-3	7.06E-13	0.551490639	0.315	0.169	1.79E-08
Flower	Ln-III	AT3G62260-AT3G62260	1.24E-12	0.541151758	0.822	0.699	3.15E-08
Flower	Ln-III	AT5G56150-UBC30	1.29E-12	0.545076254	0.621	0.474	3.28E-08
Flower	Ln-III	AT5G05220-AT5G05220	1.80E-12	1.200031472	0.468	0.323	4.58E-08
Flower	Ln-III	AT1G70640-AT1G70640	2.09E-12	0.530340245	0.359	0.208	5.31E-08
Flower	Ln-III	AT5G42650-CYP74A	2.49E-12	0.685445977	0.769	0.625	6.34E-08
Flower	Ln-III	AT5G45630-AT5G45630	3.39E-12	0.717127763	0.373	0.22	8.62E-08
Flower	Ln-III	AT1G61340-AT1G61340	4.21E-12	0.625791303	0.802	0.686	1.07E-07
Flower	Ln-III	AT5G35735-AT5G35735	8.55E-12	0.571660314	0.955	0.918	2.17E-07
Flower	Ln-III	AT2G47950-AT2G47950	1.13E-11	0.585036756	0.331	0.194	2.88E-07
Flower	Ln-III	AT4G33660-AT4G33660	2.14E-11	0.655068976	0.694	0.55	5.44E-07
Flower	Ln-III	AT1G76600-AT1G76600	3.75E-11	0.751171213	0.994	0.975	9.53E-07
Flower	Ln-III	AT1G47130-AT1G47130	4.17E-11	0.506814571	0.652	0.531	1.06E-06
Flower	Ln-III	AT3G06490-MYB108	5.51E-11	0.648409138	0.451	0.31	1.40E-06
Flower	Ln-III	AT1G01470-LEA14	6.45E-11	0.709150653	0.627	0.503	1.64E-06
Flower	Ln-III	AT4G33930-AT4G33930	7.10E-11	0.864726084	0.733	0.631	1.81E-06
Flower	Ln-III	AT5G24655-LSU4	8.24E-11	0.505641936	0.253	0.134	2.10E-06
Flower	Ln-III	AT3G25770-AOC2	8.90E-11	0.828691201	0.719	0.597	2.26E-06
Flower	Ln-III	AT3G03270-AT3G03270	1.74E-10	0.731227642	0.507	0.354	4.43E-06
Flower	Ln-III	AT5G45350-AT5G45350	1.95E-10	0.667151758	0.919	0.876	4.96E-06
Flower	Ln-III	AT2G38240-ANS	2.62E-10	0.685286925	0.571	0.418	6.65E-06
Flower	Ln-III	AT1G20823-ATL80	3.19E-10	0.587287791	0.323	0.191	8.12E-06
Flower	Ln-III	AT5G46780-AT5G46780	6.64E-10	0.523386031	0.487	0.351	1.69E-05
Flower	Ln-III	AT3G49780-PSK3	2.36E-09	0.652074023	0.944	0.928	6.00E-05
Flower	Ln-III	AT1G66500-PCFS1	3.79E-09	0.751722992	0.836	0.786	9.63E-05
Flower	Ln-III	AT2G29440-GSTU6	7.61E-09	0.535522451	0.51	0.368	0.0001934
Flower	Ln-III	AT1G62480-AT1G62480	1.31E-08	0.743770103	0.46	0.323	0.0003328
Flower	Ln-III	AT5G54510-GH3.6	1.32E-08	0.664145828	0.251	0.146	0.0003356
Flower	Ln-III	AT5G53590-AT5G53590	2.54E-08	0.598599436	0.46	0.335	0.0006468
Flower	Ln-III	AT3G16330-AT3G16330	9.38E-08	0.564326862	0.376	0.262	0.0023853
Flower	Ln-III	AT1G03070-LFG4	1.77E-07	0.681415492	0.446	0.325	0.0044974
Flower	Ln-III	AT1G70410-BCA4	2.39E-07	0.508888644	0.493	0.383	0.0060869
Flower	Ln-III	AT4G38740-CYP18-3	3.58E-07	1.547611506	0.496	0.398	0.0090873
Flower	Ln-III	AT1G01620-PIP1-3	3.89E-07	0.555707471	0.655	0.54	0.0098769
Flower	Ln-III	AT2G32150-AT2G32150	1.06E-06	0.627131877	0.677	0.61	0.0269931
Flower	Ln-III	AT5G12140-CYS1	1.24E-06	0.851991469	0.585	0.505	0.0315333
Flower	Ln-III	AT5G49450-BZIP1	2.37E-06	0.636592553	0.713	0.648	0.0603344
Flower	Ln-III	AT2G41100-CML12	3.29E-06	0.501960571	0.682	0.58	0.0836022
Flower	Ln-III	AT2G40000-HSPRO2	7.85E-06	0.542327581	0.891	0.923	0.1994124
Flower	Ln-III	AT2G31345-AT2G31345	3.40E-05	0.662304487	0.354	0.266	0.8647843
Flower	Ln-III	AT1G05340-AT1G05340	8.49E-05	0.552245427	0.596	0.542	1
Flower	Ln-III	AT1G55210-DIR20	0.000408862	0.625035053	0.696	0.643	1
Leaf	Ln-I	AT1G01120-KCS1	0	2.910356419	0.787	0.098	0
Leaf	Ln-I	AT4G01950-ATGPAT3	0	2.676952749	0.778	0.021	0
Leaf	Ln-I	AT5G28630-AT5G28630	0	2.075204468	0.61	0.009	0
Leaf	Ln-I	AT5G25610-RD22	0	2.055039515	0.643	0.013	0
Leaf	Ln-I	AT3G43720-LTPG2	0	2.003850669	0.781	0.017	0
Leaf	Ln-I	AT3G26450-AT3G26450	0	1.553853678	0.574	0.014	0
Leaf	Ln-I	AT4G34250-KCS16	0	0.878064815	0.447	0.003	0
Leaf	Ln-I	AT3G23560-DTX19	0	0.754850726	0.474	0.005	0
Leaf	Ln-I	AT2G19460-AT2G19460	2.77E-302	1.647865417	0.634	0.051	7.05E-298
Leaf	Ln-I	AT5G22270-AT5G22270	2.25E-292	2.661547284	0.826	0.121	5.71E-288
Leaf	Ln-I	AT2G46140-AT2G46140	9.59E-278	1.522070981	0.748	0.09	2.44E-273
Leaf	Ln-I	AT2G26250-FDH	1.16E-271	0.638732042	0.288	0.002	2.94E-267
Leaf	Ln-I	AT2G39350-ABCG1	2.85E-269	1.863669794	0.676	0.073	7.24E-265
Leaf	Ln-I	AT1G51500-ABCG12	2.59E-265	0.510597967	0.282	0.002	6.58E-261
Leaf	Ln-I	AT1G66100-AT1G66100	7.83E-258	1.135668041	0.342	0.009	1.99E-253
Leaf	Ln-I	AT1G68530-CUT1	3.44E-255	0.637923119	0.288	0.004	8.75E-251
Leaf	Ln-I	AT1G76240-AT1G76240	2.07E-248	0.634654715	0.309	0.006	5.27E-244
Leaf	Ln-I	AT1G63010-AT1G63010	6.18E-241	0.929331092	0.541	0.045	1.57E-236
Leaf	Ln-I	AT4G18280-AT4G18280	8.33E-230	2.078512311	0.541	0.049	2.12E-225
Leaf	Ln-I	AT1G10060-ATBCAT-1	4.49E-214	0.82809922	0.261	0.005	1.14E-209
Leaf	Ln-I	AT2G38640-AT2G38640	1.27E-212	1.521721581	0.535	0.054	3.23E-208
Leaf	Ln-I	AT3G28910-MYB30	2.50E-212	2.200277611	0.462	0.037	6.34E-208
Leaf	Ln-I	AT2G38540-LTP1	1.81E-211	2.022057942	0.363	0.018	4.61E-207
Leaf	Ln-I	AT4G15630-AT4G15630	2.17E-207	2.019793263	0.583	0.069	5.52E-203
Leaf	Ln-I	AT2G45400-BEN1	5.80E-207	0.860038801	0.303	0.01	1.47E-202
Leaf	Ln-I	AT1G22890-AT1G22890	6.64E-199	1.53196685	0.682	0.11	1.69E-194
Leaf	Ln-I	AT1G56580-SVB	1.71E-196	2.118757916	0.625	0.093	4.36E-192

Leaf	Ln-I	AT1G67560-LOX6	4.70E-182	0.542447886	0.354	0.022	1.20E-177
Leaf	Ln-I	AT2G15760-AT2G15760	2.83E-173	0.805718093	0.288	0.013	7.21E-169
Leaf	Ln-I	AT4G18910-NIP1-2	1.33E-172	1.620940207	0.649	0.117	3.37E-168
Leaf	Ln-I	AT1G09310-AT1G09310	8.59E-163	1.086056038	0.279	0.014	2.18E-158
Leaf	Ln-I	AT2G47485-AT2G47485	4.78E-158	0.527351645	0.309	0.019	1.21E-153
Leaf	Ln-I	AT5G41810-AT5G41810	6.16E-158	0.803134536	0.477	0.061	1.56E-153
Leaf	Ln-I	AT1G64200-VHA-E3	1.73E-157	1.640683214	0.817	0.222	4.41E-153
Leaf	Ln-I	AT1G78460-AT1G78460	4.74E-157	0.687777393	0.315	0.021	1.20E-152
Leaf	Ln-I	AT4G21320-HSA32	4.64E-156	1.56432628	0.631	0.123	1.18E-151
Leaf	Ln-I	AT1G27950-LTPG1	2.76E-154	1.015616413	0.417	0.043	7.00E-150
Leaf	Ln-I	AT4G14746-AT4G14746	1.52E-146	0.509471778	0.303	0.021	3.86E-142
Leaf	Ln-I	AT4G16820-PLA-I{beta}2	2.63E-145	2.2998731	0.76	0.223	6.69E-141
Leaf	Ln-I	AT1G54410-HIRD11	3.11E-140	2.377470697	0.868	0.33	7.90E-136
Leaf	Ln-I	AT5G35370-AT5G35370	1.01E-139	0.672830516	0.492	0.074	2.56E-135
Leaf	Ln-I	AT4G02940-ALKBH10B	4.07E-137	2.004575382	0.64	0.143	1.03E-132
Leaf	Ln-I	AT5G58320-NET4A	4.65E-137	0.649818784	0.375	0.04	1.18E-132
Leaf	Ln-I	AT3G16400-NSP1	2.63E-135	1.046280045	0.375	0.041	6.68E-131
Leaf	Ln-I	AT2G01340-At17.1	1.68E-127	0.638482717	0.432	0.059	4.27E-123
Leaf	Ln-I	AT1G78850-AT1G78850	1.74E-125	1.629106282	0.703	0.191	4.43E-121
Leaf	Ln-I	AT3G24420-AT3G24420	7.96E-125	2.357393493	0.601	0.14	2.02E-120
Leaf	Ln-I	AT3G49120-PER34	1.45E-122	1.825888629	0.772	0.26	3.67E-118
Leaf	Ln-I	AT5G59490-AT5G59490	1.96E-117	0.739358	0.294	0.027	4.97E-113
Leaf	Ln-I	AT3G44320-NIT3	2.53E-116	0.560829835	0.279	0.024	6.42E-112
Leaf	Ln-I	AT2G32190-AT2G32190	1.76E-114	1.645545709	0.997	0.833	4.47E-110
Leaf	Ln-I	AT2G03980-AT2G03980	8.52E-113	0.552538501	0.387	0.054	2.17E-108
Leaf	Ln-I	AT5G67600-WIH1	6.59E-108	0.988612892	0.586	0.142	1.68E-103
Leaf	Ln-I	AT3G13790-CWINV1	2.30E-104	1.532543965	0.685	0.232	5.83E-100
Leaf	Ln-I	AT3G10960-AZG1	2.90E-103	1.290411437	0.712	0.243	7.37E-99
Leaf	Ln-I	AT4G28150-AT4G28150	2.09E-102	0.526627381	0.318	0.039	5.32E-98
Leaf	Ln-I	AT4G19200-AT4G19200	3.39E-102	1.539549102	0.982	0.744	8.61E-98
Leaf	Ln-I	AT2G39400-AT2G39400	3.41E-97	2.031907812	0.898	0.573	8.66E-93
Leaf	Ln-I	AT5G20050-AT5G20050	1.16E-91	1.417600966	0.868	0.475	2.95E-87
Leaf	Ln-I	AT5G43760-KCS20	1.81E-91	1.247465852	0.754	0.292	4.60E-87
Leaf	Ln-I	AT5G54585-AT5G54585	3.86E-90	0.967347451	0.306	0.042	9.82E-86
Leaf	Ln-I	AT1G78050-PGM	3.96E-90	0.520496916	0.348	0.054	1.01E-85
Leaf	Ln-I	AT1G78830-AT1G78830	1.10E-87	1.177269819	0.517	0.128	2.79E-83
Leaf	Ln-I	AT4G00360-CYP86A2	1.50E-86	1.011959068	0.414	0.086	3.82E-82
Leaf	Ln-I	AT5G22250-CAF1-11	6.29E-86	1.500151887	0.931	0.607	1.60E-81
Leaf	Ln-I	AT4G29740-CKX4	8.85E-86	0.567142838	0.327	0.05	2.25E-81
Leaf	Ln-I	AT1G74790-HIPL1	1.21E-84	0.505320384	0.381	0.071	3.08E-80
Leaf	Ln-I	AT1G02360-AT1G02360	1.90E-83	1.191552968	0.39	0.077	4.83E-79
Leaf	Ln-I	AT1G65690-NHL6	3.20E-81	1.657170265	0.745	0.319	8.12E-77
Leaf	Ln-I	AT2G22560-NET2D	5.00E-79	0.687270575	0.498	0.128	1.27E-74
Leaf	Ln-I	AT2G29420-GSTU7	3.60E-78	1.174333661	0.976	0.794	9.14E-74
Leaf	Ln-I	AT4G37870-PCKA	1.99E-77	0.791836726	0.339	0.061	5.07E-73
Leaf	Ln-I	AT5G57220-CYP81F2	2.85E-77	0.989630808	0.508	0.137	7.23E-73
Leaf	Ln-I	AT2G32200-AT2G32200	1.26E-75	1.285938596	0.835	0.451	3.19E-71
Leaf	Ln-I	AT2G32210-AT2G32210	3.12E-75	1.267973792	0.958	0.783	7.94E-71
Leaf	Ln-I	AT3G52520-AT3G52520	1.10E-74	1.098178612	0.498	0.137	2.79E-70
Leaf	Ln-I	AT5G65140-TPPJ	2.34E-74	0.674980022	0.339	0.063	5.95E-70
Leaf	Ln-I	AT5G57510-AT5G57510	3.18E-74	1.613372133	0.715	0.302	8.07E-70
Leaf	Ln-I	AT2G43120-AT2G43120	1.32E-73	2.090164379	0.928	0.735	3.34E-69
Leaf	Ln-I	AT3G03640-BGLU25	1.03E-72	1.176579228	0.324	0.06	2.62E-68
Leaf	Ln-I	AT4G18950-AT4G18950	1.10E-72	1.070793181	1	0.991	2.80E-68
Leaf	Ln-I	AT3G08690-UBC11	1.81E-72	1.392859152	0.802	0.41	4.60E-68
Leaf	Ln-I	AT3G19660-AT3G19660	4.38E-72	0.763504723	0.514	0.144	1.11E-67
Leaf	Ln-I	AT5G65240-AT5G65240	2.38E-70	0.640781251	0.502	0.146	6.05E-66
Leaf	Ln-I	AT2G01300-AT2G01300	8.23E-70	0.700082355	0.312	0.056	2.09E-65
Leaf	Ln-I	AT3G08970-ERDJ3A	4.03E-68	1.098232054	0.802	0.451	1.02E-63
Leaf	Ln-I	AT2G41475-ATS3A	1.70E-67	1.055165745	0.814	0.424	4.31E-63
Leaf	Ln-I	AT1G63180-UGE3	1.43E-66	0.867529377	0.288	0.05	3.63E-62
Leaf	Ln-I	AT5G06750-AT5G06750	1.90E-66	0.560575193	0.435	0.113	4.83E-62
Leaf	Ln-I	ATMG00020-RRN26	2.79E-65	1.112876009	0.976	0.962	7.09E-61
Leaf	Ln-I	AT3G26200-CYP71B22	3.28E-65	1.56913767	0.423	0.111	8.34E-61
Leaf	Ln-I	AT2G47000-ABCB4	3.20E-64	0.828262137	0.267	0.045	8.12E-60
Leaf	Ln-I	AT1G06800-PLA-I{gamma}1	5.88E-63	0.622535119	0.532	0.171	1.49E-58
Leaf	Ln-I	AT2G34355-AT2G34355	1.57E-62	0.502034947	0.327	0.068	3.99E-58
Leaf	Ln-I	AT5G46350-WRKY8	4.91E-62	0.709217997	0.33	0.071	1.25E-57
Leaf	Ln-I	AT1G07160-AT1G07160	1.12E-61	1.20619395	0.952	0.76	2.84E-57
Leaf	Ln-I	AT1G74010-AT1G74010	6.57E-61	1.03679467	0.529	0.177	1.67E-56
Leaf	Ln-I	AT3G05937-AT3G05937	1.96E-60	0.602231604	0.423	0.116	4.99E-56
Leaf	Ln-I	AT3G30775-POX1	4.92E-60	1.068850881	0.79	0.417	1.25E-55

Leaf	Ln-I	AT2G31570-GPX2	1.64E-59	1.075853501	0.94	0.762	4.17E-55
Leaf	Ln-II	ATCG00020-PSBA	6.53E-143	0.886463467	0.997	0.98	1.66E-138
Leaf	Ln-II	ATCG00440-NDHC	3.88E-129	0.893163048	0.966	0.82	9.87E-125
Leaf	Ln-II	AT5G24160-SQE6	1.49E-106	0.816829022	0.416	0.062	3.78E-102
Leaf	Ln-II	AT2G39518-AT2G39518	4.21E-104	1.639037509	0.664	0.37	1.07E-99
Leaf	Ln-II	AT3G14420-GLO1	2.46E-89	0.814674954	0.874	0.591	6.25E-85
Leaf	Ln-II	ATCG00130-ATPF	4.65E-84	0.625383954	0.988	0.937	1.18E-79
Leaf	Ln-II	ATCG00040-MATK	6.32E-83	0.673550615	0.953	0.8	1.61E-78
Leaf	Ln-II	AT2G05380-GRP3S	1.31E-81	1.06606852	0.91	0.77	3.32E-77
Leaf	Ln-II	ATCG01070-NDHE	3.20E-81	0.517224682	0.981	0.848	8.12E-77
Leaf	Ln-II	ATCG00490-RBCL	9.38E-79	0.606906735	0.993	0.94	2.38E-74
Leaf	Ln-II	ATCG00470-ATPE	4.92E-78	0.55779354	0.987	0.903	1.25E-73
Leaf	Ln-II	ATCG00340-PSAB	9.97E-78	0.514842973	0.978	0.886	2.53E-73
Leaf	Ln-II	AT5G14740-BCA2	8.21E-77	1.005188169	0.893	0.702	2.09E-72
Leaf	Ln-II	AT5G16970-AER	8.37E-74	0.849291864	0.962	0.881	2.13E-69
Leaf	Ln-II	AT3G18780-ACT2	1.78E-72	0.50285763	0.964	0.876	4.52E-68
Leaf	Ln-II	AT2G43620-AT2G43620	5.14E-71	1.143939187	0.783	0.561	1.31E-66
Leaf	Ln-II	AT3G53280-CYP71B5	6.91E-70	1.009750629	0.629	0.39	1.76E-65
Leaf	Ln-II	AT1G37130-NIA2	2.30E-68	0.56605451	0.828	0.555	5.84E-64
Leaf	Ln-II	AT5G61410-RPE	8.25E-68	0.561719806	0.85	0.643	2.10E-63
Leaf	Ln-II	AT1G68010-HPR	2.04E-67	0.662520753	0.808	0.565	5.18E-63
Leaf	Ln-II	AT3G50480-HR4	3.65E-67	0.821276224	0.714	0.492	9.27E-63
Leaf	Ln-II	AT1G07000-ATEXO70B2	6.27E-66	0.617722685	0.965	0.905	1.59E-61
Leaf	Ln-II	AT1G79160-AT1G79160	3.44E-64	0.843068721	0.528	0.256	8.74E-60
Leaf	Ln-II	AT5G35630-GLN2	3.30E-63	0.601703704	0.741	0.469	8.40E-59
Leaf	Ln-II	AT3G07195-AT3G07195	1.14E-62	0.795456122	0.57	0.301	2.90E-58
Leaf	Ln-II	AT2G37970-SOUL-1	9.19E-60	0.523410303	0.901	0.737	2.34E-55
Leaf	Ln-II	AT4G38970-FBA2	6.91E-59	0.772545766	0.827	0.606	1.76E-54
Leaf	Ln-II	AT4G32260-AT4G32260	9.01E-59	0.623222751	0.832	0.575	2.29E-54
Leaf	Ln-II	AT1G42970-GAPB	3.76E-57	0.770876058	0.762	0.552	9.56E-53
Leaf	Ln-II	AT5G03030-AT5G03030	3.96E-57	0.569907765	0.957	0.907	1.01E-52
Leaf	Ln-II	AT4G03280-PETC	4.42E-57	0.599855157	0.878	0.658	1.12E-52
Leaf	Ln-II	AT3G04620-AT3G04620	7.96E-57	0.621304535	0.896	0.776	2.02E-52
Leaf	Ln-II	AT4G01150-CURT1A	1.09E-55	0.597347255	0.776	0.535	2.78E-51
Leaf	Ln-II	AT3G26650-GAPA1	1.70E-55	0.704089464	0.932	0.791	4.32E-51
Leaf	Ln-II	AT1G23310-GGAT1	3.24E-54	0.554435754	0.94	0.766	8.23E-50
Leaf	Ln-II	AT4G34620-RPS16-1	1.10E-53	0.566675014	0.915	0.732	2.79E-49
Leaf	Ln-II	AT2G43570-CHI	1.81E-53	0.79809172	0.622	0.4	4.60E-49
Leaf	Ln-II	AT2G26500-AT2G26500	7.06E-53	0.597211108	0.831	0.608	1.79E-48
Leaf	Ln-II	AT2G34250-AT2G34250	7.97E-53	0.500793685	0.906	0.807	2.02E-48
Leaf	Ln-II	AT1G78630-RPL13	1.19E-52	0.632294064	0.568	0.324	3.02E-48
Leaf	Ln-II	AT1G79040-PSBR	1.22E-51	0.600066768	0.922	0.756	3.09E-47
Leaf	Ln-II	AT5G01530-LHCB4.1	5.50E-51	0.544608996	0.928	0.799	1.40E-46
Leaf	Ln-II	AT4G24770-CP31A	9.55E-51	0.589731746	0.81	0.59	2.43E-46
Leaf	Ln-II	AT4G18880-HSFA4A	1.20E-49	0.594570222	0.914	0.826	3.05E-45
Leaf	Ln-II	AT2G28190-CSD2	1.41E-49	0.579414465	0.667	0.445	3.59E-45
Leaf	Ln-II	AT4G22470-AT4G22470	1.46E-49	0.760419417	0.635	0.387	3.71E-45
Leaf	Ln-II	AT4G36220-CYP84A1	8.21E-49	0.530869764	0.325	0.107	2.09E-44
Leaf	Ln-II	AT4G34881-AT4G34881	6.59E-47	0.636527048	0.639	0.429	1.67E-42
Leaf	Ln-II	AT2G46150-AT2G46150	1.50E-45	0.524903152	0.374	0.155	3.80E-41
Leaf	Ln-II	AT3G61470-LHCA2	3.09E-42	0.506996049	0.904	0.743	7.84E-38
Leaf	Ln-II	AT5G66570-PSBO1	1.35E-41	0.538922633	0.851	0.642	3.44E-37
Leaf	Ln-II	AT1G44575-PSBS	2.39E-41	0.659207958	0.698	0.492	6.08E-37
Leaf	Ln-II	AT1G76080-CDSP32	2.91E-41	0.746329265	0.779	0.65	7.40E-37
Leaf	Ln-II	AT5G48150-PAT1	4.64E-41	0.533239227	0.654	0.461	1.18E-36
Leaf	Ln-II	AT3G14415-AT3G14415	8.51E-40	0.521174811	0.689	0.473	2.16E-35
Leaf	Ln-II	AT2G21330-FBA1	2.29E-39	0.594562916	0.513	0.3	5.81E-35
Leaf	Ln-II	AT2G46820-CURT1B	3.74E-39	0.543855089	0.675	0.468	9.51E-35
Leaf	Ln-II	AT1G67090-RBCS-1A	6.24E-37	0.604750912	0.969	0.865	1.59E-32
Leaf	Ln-II	AT1G02930-GSTF6	2.35E-35	0.586076668	0.925	0.862	5.96E-31
Leaf	Ln-II	AT4G08555-AT4G08555	2.51E-35	0.65978381	0.668	0.496	6.38E-31
Leaf	Ln-II	AT5G37600-GLN1-1	2.84E-35	0.63832561	0.667	0.509	7.21E-31
Leaf	Ln-II	AT4G15550-UGT75D1	4.79E-35	0.55624659	0.47	0.284	1.22E-30
Leaf	Ln-II	AT5G21020-AT5G21020	1.03E-32	0.563132087	0.653	0.473	2.63E-28
Leaf	Ln-II	AT4G31290-GGCT2;2	4.68E-31	0.513733024	0.806	0.682	1.19E-26
Leaf	Ln-II	AT3G01500-BCA1	8.31E-29	0.52551305	0.491	0.327	2.11E-24
Leaf	Ln-II	AT2G39730-RCA	3.48E-28	0.540774087	0.852	0.704	8.85E-24
Leaf	Ln-II	AT5G38410-AT5G38410	2.45E-19	0.539128416	0.784	0.643	6.23E-15
Leaf	Ln-II	AT5G17000-AT5G17000	4.44E-15	0.529353678	0.789	0.755	1.13E-10
Leaf	Ln-II	AT1G29920-LHCB1.1	7.37E-13	0.59235293	0.642	0.531	1.87E-08
Leaf	Ln-II	AT3G16240-TIP2-1	4.12E-10	0.888642818	0.417	0.326	1.05E-05
Leaf	Ln-II	AT1G20450-ERD10	6.18E-09	0.516294822	0.718	0.664	0.0001571

Leaf	Ln-III	AT1G20620-CAT3	7.01E-83	0.694558794	0.709	0.387	1.78E-78
Leaf	Ln-III	AT1G66500-PCFS1	1.09E-57	0.788556022	0.962	0.904	2.77E-53
Leaf	Ln-III	AT1G01720-NAC002	9.79E-56	0.704434392	0.991	0.981	2.49E-51
Leaf	Ln-III	AT5G05410-DREB2A	2.42E-54	0.735083988	0.967	0.877	6.14E-50
Leaf	Ln-III	AT4G11280-ACS6	6.15E-42	0.762099097	0.819	0.637	1.56E-37
Leaf	Ln-III	AT3G19240-AT3G19240	9.84E-41	0.725330449	0.793	0.654	2.50E-36
Leaf	Ln-III	AT4G17490-ERF6	3.90E-37	0.653324446	0.863	0.752	9.92E-33
Leaf	Ln-III	AT1G19570-DHAR1	7.21E-35	0.862322028	0.521	0.331	1.83E-30
Leaf	Ln-III	AT1G69890-AT1G69890	5.16E-32	0.514289999	0.897	0.847	1.31E-27
Leaf	Ln-III	AT1G07410-RABA2B	1.14E-31	0.539158661	0.407	0.22	2.90E-27
Leaf	Ln-III	AT1G70640-AT1G70640	2.71E-30	0.739923243	0.481	0.297	6.89E-26
Leaf	Ln-III	AT4G13395-DVL10	3.37E-27	0.568543599	0.761	0.625	8.57E-23
Leaf	Ln-III	AT1G78020-FLZ6	9.25E-26	0.52806501	0.574	0.436	2.35E-21
Leaf	Ln-III	AT4G09030-AGP10	1.11E-24	0.697283052	0.564	0.41	2.82E-20
Leaf	Ln-III	AT1G62380-ACO2	1.26E-24	0.630501462	0.739	0.602	3.19E-20
Leaf	Ln-III	AT3G23030-IAA2	1.53E-24	0.577114978	0.835	0.727	3.88E-20
Leaf	Ln-III	AT5G14730-AT5G14730	2.41E-24	0.683629999	0.718	0.596	6.13E-20
Leaf	Ln-III	AT3G15356-LEC	5.71E-24	0.694348405	0.577	0.41	1.45E-19
Leaf	Ln-III	AT4G35480-ATL45	6.36E-24	0.523057755	0.636	0.5	1.62E-19
Leaf	Ln-III	AT5G24660-LSU2	5.42E-23	0.547111377	0.615	0.473	1.38E-18
Leaf	Ln-III	AT5G04340-ZAT6	2.32E-22	0.535730189	0.94	0.888	5.90E-18
Leaf	Ln-III	AT5G49450-BZIP1	3.97E-22	0.616950422	0.883	0.851	1.01E-17
Leaf	Ln-III	AT2G41100-CML12	5.76E-21	0.513257457	0.929	0.875	1.46E-16
Leaf	Ln-III	AT5G54770-THI1	1.25E-19	0.619831849	0.764	0.692	3.17E-15
Leaf	Ln-III	AT1G30135-TIFY5A	2.64E-16	0.580999224	0.482	0.359	6.72E-12
Leaf	Ln-III	AT3G14990-DJ1A	1.94E-15	0.530627057	0.275	0.166	4.93E-11
Leaf	Ln-III	AT5G05220-AT5G05220	3.24E-14	0.940630453	0.428	0.321	8.25E-10
Leaf	Ln-III	AT3G53260-PAL2	1.47E-12	0.713017308	0.591	0.514	3.72E-08
Leaf	Ln-III	AT1G71000-AT1G71000	1.38E-11	0.510867961	0.637	0.541	3.50E-07
Leaf	Ln-III	AT3G06490-MYB108	3.30E-08	0.595969887	0.428	0.35	0.0008376
Leaf	Ln-III	AT4G33930-AT4G33930	3.77E-07	0.590155288	0.642	0.6	0.0095855
Leaf	Ln-III	AT1G69930-GSTU11	4.21E-05	0.515701807	0.353	0.296	1

Table S7 | Lineage-specific DEGs in Cluster 6, 13, and 18.

Method	Cluster	Tissue	Lineage	Gene	p_val	avg_log2FC	pct.1	pct.2	p_val_adj
FindAllMarkers	6	leaf	Ln-II	AT2G15320-AT2G15320	0.000654604	0.617287963	0.324	0.085	1
FindAllMarkers	6	leaf	Ln-II	AT5G17000-AT5G17000	0.000707532	1.131400545	0.732	0.593	1
FindAllMarkers	6	leaf	Ln-II	AT1G37130-NIA2	0.001076168	0.61598196	0.535	0.271	1
FindAllMarkers	6	leaf	Ln-II	AT4G24972-TPD1	0.002416932	0.651470967	0.352	0.136	1
FindAllMarkers	6	leaf	Ln-II	AT5G16970-AER	0.009996132	0.726081065	0.873	0.831	1
FindAllMarkers	6	leaf	Ln-III	AT5G57560-XTH22	0.000157055	0.656493196	0.966	0.761	1
FindAllMarkers	6	leaf	Ln-III	AT5G60680-AT5G60680	0.000538794	0.904937109	0.831	0.592	1
FindAllMarkers	6	leaf	Ln-III	AT3G10815-AT3G10815	5.72E-04	0.549902314	0.288	0.056	1
FindAllMarkers	6	leaf	Ln-III	AT5G52400-CYP715A1	0.000601919	0.814367794	0.559	0.282	1
FindAllMarkers	6	leaf	Ln-III	AT1G73500-MKK9	0.000870807	0.746410235	0.542	0.268	1
FindAllMarkers	6	leaf	Ln-III	AT1G68795-CLE12	0.001724836	0.519265493	0.305	0.085	1
FindAllMarkers	6	leaf	Ln-III	AT5G01600-FER1	0.001916635	0.633186354	0.983	0.93	1
FindAllMarkers	6	leaf	Ln-III	AT1G55330-AGP21	0.003435408	0.564508575	0.78	0.62	1
FindAllMarkers	6	leaf	Ln-III	AT2G22850-AtbZIP6	0.004015796	0.502815677	0.61	0.366	1
FindAllMarkers	6	leaf	Ln-III	AT1G64660-MGL	0.004083195	0.794205655	0.525	0.338	1
FindAllMarkers	6	leaf	Ln-III	AT3G15450-AT3G15450	0.004106447	1.133447803	0.729	0.521	1
FindAllMarkers	6	leaf	Ln-III	AT2G37180-PIP2-3	0.00444843	0.510731586	0.627	0.394	1
FindAllMarkers	6	leaf	Ln-III	AT5G55180-AT5G55180	0.004500797	0.918007596	0.729	0.549	1
FindAllMarkers	6	leaf	Ln-III	AT1G07150-MAPKKK13	0.004957299	0.823585816	0.542	0.31	1
FindAllMarkers	6	leaf	Ln-III	AT5G04600-AT5G50450	0.004965946	0.604092917	0.559	0.31	1
FindAllMarkers	6	leaf	Ln-III	AT2G44790-UCC2	0.005044804	1.039342452	0.475	0.239	1
FindAllMarkers	6	leaf	Ln-III	AT1G43160-RAP2-6	0.00557501	0.74088708	0.492	0.268	1
FindAllMarkers	6	leaf	Ln-III	AT4G33930-AT4G33930	0.00567846	0.671660491	0.881	0.887	1
FindAllMarkers	6	leaf	Ln-III	AT1G74100-SOT16	0.006114123	1.098692022	0.458	0.268	1
FindAllMarkers	6	leaf	Ln-III	AT3G25620-ABCG21	0.00626387	0.553406849	0.339	0.141	1
FindAllMarkers	6	leaf	Ln-III	AT5G54300-AT5G54300	0.006666907	0.606659916	0.695	0.493	1
FindAllMarkers	6	leaf	Ln-III	AT2G45450-ZPR1	0.007003067	0.556942619	0.356	0.155	1
FindAllMarkers	6	leaf	Ln-III	AT4G09460-MYB6	0.007380329	0.935281831	0.525	0.338	1
FindAllMarkers	6	leaf	Ln-III	AT3G56090-FER3	0.009286322	0.549462447	0.847	0.732	1
FindAllMarkers	6	leaf	Ln-III	AT5G19230-AT5G19230	0.009340896	0.689357161	0.458	0.268	1
FindAllMarkers	6	flower	Ln-II	AT5G24800-BZIP9	1.30E-03	0.52864047	0.543	0.369	1
FindAllMarkers	6	flower	Ln-II	AT1G70680-PXG5	1.48E-03	0.735443757	0.258	0.131	1
FindAllMarkers	6	flower	Ln-II	AT2G02100-PDF2.2	3.60E-03	0.817517791	0.552	0.426	1
FindAllMarkers	6	flower	Ln-II	AT3G14990-DJ1A	3.80E-03	0.580965517	0.905	0.91	1
FindAllMarkers	6	flower	Ln-II	AT2G44460-BGLU28	4.22E-03	0.516204119	0.377	0.27	1
FindAllMarkers	6	flower	Ln-II	AT5G54660-HSP21.7	0.004267973	0.507973263	0.463	0.328	1
FindAllMarkers	6	flower	Ln-III	AT1G62360-STM	4.13E-09	0.545811464	0.533	0.24	0.0001
FindAllMarkers	6	flower	Ln-III	AT3G13660-DIR22	4.41E-08	0.59231803	0.549	0.267	0.00112
FindAllMarkers	6	flower	Ln-III	AT3G13650-DIR7	1.06E-07	1.227534286	0.607	0.395	0.0027
FindAllMarkers	6	flower	Ln-III	AT1G08940-AT1G08940	1.13E-07	0.595953456	0.77	0.543	0.00288
FindAllMarkers	6	flower	Ln-III	AT1G76650-CMLn-III8	6.05E-07	0.817353862	0.91	0.878	0.01537
FindAllMarkers	6	flower	Ln-III	AT3G53600-AT3G53600	7.77E-07	0.691624631	0.344	0.139	0.01975
FindAllMarkers	6	flower	Ln-III	AT4G33930-AT4G33930	1.63E-06	0.875601866	0.91	0.774	0.04137
FindAllMarkers	6	flower	Ln-III	AT4G20780-CML42	1.63E-06	0.758796932	0.639	0.424	0.04149
FindAllMarkers	6	flower	Ln-III	AT1G07135-AT1G07135	3.90E-06	0.762614725	0.885	0.715	0.09921
FindAllMarkers	6	flower	Ln-III	AT5G05220-AT5G05220	4.37E-06	1.529285155	0.598	0.412	0.11119
FindAllMarkers	6	flower	Ln-III	AT2G22500-PUMP5	4.78E-06	0.699245267	0.902	0.822	0.12145
FindAllMarkers	6	flower	Ln-III	AT2G37430-ZAT11	6.51E-06	0.788398871	0.697	0.504	0.16551
FindAllMarkers	6	flower	Ln-III	AT5G49450-BZIP1	1.29E-05	0.866453574	0.721	0.605	0.32827
FindAllMarkers	6	flower	Ln-III	AT5G60680-AT5G60680	1.43E-05	0.568263171	0.574	0.38	0.36312
FindAllMarkers	6	flower	Ln-III	AT2G15960-AT2G15960	3.24E-05	0.862421957	0.713	0.591	0.82423
FindAllMarkers	6	flower	Ln-III	AT3G16240-TIP2-1	6.35E-05	0.944084874	0.705	0.614	1
FindAllMarkers	6	flower	Ln-III	AT5G65630-GTE7	6.52E-05	0.656908596	0.795	0.718	1
FindAllMarkers	6	flower	Ln-III	AT2G30490-CYP73A5	6.69E-05	0.597282345	0.951	0.917	1
FindAllMarkers	6	flower	Ln-III	AT2G37180-PIP2-3	6.72E-05	0.616871231	0.475	0.285	1
FindAllMarkers	6	flower	Ln-III	AT2G31560-AT2G31560	8.57E-05	0.698368182	0.705	0.57	1
FindAllMarkers	6	flower	Ln-III	AT4G36500-AT4G36500	1.06E-04	0.645366447	0.82	0.709	1
FindAllMarkers	6	flower	Ln-III	AT3G23170-AT3G23170	1.24E-04	0.761908441	0.656	0.567	1
FindAllMarkers	6	flower	Ln-III	AT1G66500-PCFS1	1.69E-04	0.690885243	0.902	0.843	1
FindAllMarkers	6	flower	Ln-III	AT1G47130-AT1G47130	1.92E-04	0.543086306	0.705	0.588	1
FindAllMarkers	6	flower	Ln-III	AT3G25770-AOC2	2.10E-04	0.771817059	0.828	0.727	1
FindAllMarkers	6	flower	Ln-III	AT5G20230-BCB	2.93E-04	0.60163094	0.975	0.953	1
FindAllMarkers	6	flower	Ln-III	AT2G41100-CML12	4.13E-04	0.525451921	0.82	0.659	1
FindAllMarkers	6	flower	Ln-III	AT5G24655-LSU4	5.31E-04	0.647250512	0.418	0.273	1
FindAllMarkers	6	flower	Ln-III	AT1G61340-AT1G61340	9.22E-04	0.540906274	0.943	0.828	1
FindAllMarkers	6	flower	Ln-III	AT1G15670-AT1G15670	1.66E-03	0.527586659	0.328	0.202	1
FindAllMarkers	6	flower	Ln-III	AT2G47550-PME20	2.00E-03	0.595192221	0.426	0.282	1
FindAllMarkers	6	flower	Ln-III	AT3G02840-AT3G02840	2.52E-03	0.512399355	0.697	0.588	1
FindAllMarkers	6	flower	Ln-III	AT4G17670-FLZ2	2.64E-03	0.561820323	0.541	0.43	1
FindAllMarkers	6	flower	Ln-III	AT5G50450-AT5G50450	4.67E-03	0.546608375	0.459	0.35	1
FindAllMarkers	6	flower	Ln-III	AT5G54490-PBP1	4.73E-03	0.554990297	0.631	0.519	1
FindAllMarkers	6	flower	Ln-III	AT1G32127-AT1G32127	5.76E-03	0.562985616	0.418	0.312	1
FindAllMarkers	6	flower	Ln-III	AT3G28210-SAP12	6.20E-03	0.648912487	0.943	0.926	1
FindAllMarkers	13	leaf	Ln-II	AT4G37980-CAD7	7.08E-04	0.944074706	0.432	0.185	1
FindAllMarkers	13	leaf	Ln-II	AT2G46370-JAR1	2.10E-03	0.849016111	0.519	0.259	1
FindAllMarkers	13	leaf	Ln-II	AT2G15960-AT2G15960	3.33E-03	1.144453693	0.543	0.352	1
FindAllMarkers	13	leaf	Ln-II	AT1G21550-CML44	3.43E-03	1.507199529	0.296	0.093	1

FindAllMarkers	13	leaf	Ln-II	AT3G18560-AT3G18560	3.97E-03	0.991911751	0.667	0.463	1
FindAllMarkers	13	leaf	Ln-II	AT1G37130-NIA2	9.60E-03	0.664061067	0.654	0.463	1
FindAllMarkers	13	leaf	Ln-III	AT3G61190-BAP1	5.92E-05	0.86300197	0.852	0.593	1
FindAllMarkers	13	leaf	Ln-III	AT4G13930-SHM4	8.05E-04	0.543708545	0.333	0.099	1
FindAllMarkers	13	leaf	Ln-III	AT1G30135-TIFY5A	0.001267425	1.021738051	0.407	0.173	1
FindAllMarkers	13	leaf	Ln-III	AT2G46650-CYT85-C	0.001447165	0.77970831	0.333	0.123	1
FindAllMarkers	13	leaf	Ln-III	AT5G21940-AT5G21940	0.001514761	0.696990839	0.981	0.802	1
FindAllMarkers	13	leaf	Ln-III	AT3G16050-PDX12	0.001778903	0.65411949	0.926	0.901	1
FindAllMarkers	13	leaf	Ln-III	AT5G38310-AT5G38310	0.002987134	0.65095705	0.259	0.074	1
FindAllMarkers	13	leaf	Ln-III	AT1G74100-SOT16	0.003806495	0.797491793	0.574	0.346	1
FindAllMarkers	13	leaf	Ln-III	AT4G31500-CYP83B1	0.008074031	0.597887619	0.722	0.506	1
FindAllMarkers	13	leaf	Ln-III	AT1G26910-RPL10B	8.40E-03	0.563170768	0.463	0.272	1.00E+00
FindAllMarkers	13	leaf	Ln-III	AT3G25870-AT3G25870	9.48E-03	0.518015246	0.537	0.321	1
FindAllMarkers	13	flower	Ln-III	AT3G16800-AT3G16800	3.02E-04	1.144705229	0.8	0.056	1
FindAllMarkers	13	flower	Ln-III	AT5G20700-FLZ14	7.43E-04	1.040790465	0.6	0	1
FindAllMarkers	13	flower	Ln-III	AT4G37730-AtbZIP7	1.72E-03	1.567996715	0.8	0.111	1
FindAllMarkers	13	flower	Ln-III	AT3G61890-ATHB-12	4.03E-03	1.294389178	0.6	0.056	1
FindAllMarkers	13	flower	Ln-III	AT4G38740-CYP18-3	6.07E-03	1.1818513	0.8	0.167	1
FindAllMarkers	13	flower	Ln-III	AT4G33905-AT4G33905	6.75E-03	1.382241037	0.8	0.278	1
FindAllMarkers	13	flower	Ln-III	AT5G59030-COPT1	7.52E-03	1.076497512	0.8	0.222	1
FindAllMarkers	13	flower	Ln-III	AT3G28150-AXY4L	7.64E-03	1.004091435	0.4	0	1
FindAllMarkers	13	flower	Ln-III	AT1G10280-AT1G10280	7.64E-03	0.942270218	0.4	0	1
FindAllMarkers	13	flower	Ln-III	AT3G10400-SNRNP31	7.64E-03	0.788198967	0.4	0	1
FindAllMarkers	13	flower	Ln-III	AT1G14640-AT1G14640	7.64E-03	0.698144752	0.4	0	1
FindAllMarkers	13	flower	Ln-III	AT3G27880-AT3G27880	7.64E-03	0.698144752	0.4	0	1
FindAllMarkers	13	flower	Ln-III	AT1G79510-AT1G79510	7.64E-03	0.619657748	0.4	0	1
FindAllMarkers	13	flower	Ln-III	AT3G04850-TCX4	7.64E-03	0.619657748	0.4	0	1
FindAllMarkers	18	leaf	Ln-III	AT2G27830-AT2G27830	2.83E-03	1.728338299	1	0	1
FindAllMarkers	18	leaf	Ln-III	AT4G37250-AT4G37250	2.83E-03	1.352223178	1	0	1
FindAllMarkers	18	leaf	Ln-III	AT2G43620-AT2G43620	2.83E-03	1.067954133	1	0	1
FindAllMarkers	18	leaf	Ln-III	AT5G52570-BETA-OHASE	2.83E-03	1.031949009	1	0	1
FindAllMarkers	18	leaf	Ln-III	AT5G51880-AT5G51880	2.83E-03	0.953857425	1	0	1
FindAllMarkers	18	leaf	Ln-III	AT2G23950-AT2G23950	0.002830068	0.927969199	1	0	1
FindAllMarkers	18	leaf	Ln-III	AT5G52310-RD29A	0.006551379	2.034484135	1	0.125	1
FindAllMarkers	18	leaf	Ln-III	AT4G03430-STA1	0.006551379	1.638427156	1	0.125	1
FindAllMarkers	18	leaf	Ln-III	AT2G31585-AT2G31585	0.006551379	1.32390922	1	0.125	1
FindAllMarkers	18	leaf	Ln-III	ATCG00790-RPL16	0.006551379	1.237282052	1	0.125	1
FindAllMarkers	18	leaf	Ln-III	AT1G70590-AT1G70590	0.006551379	1.144583796	1	0.125	1
FindAllMarkers	18	leaf	Ln-III	AT3G02740-AT3G02740	0.006551379	0.95050776	1	0.125	1
FindAllMarkers	18	leaf	Ln-III	AT5G13970-AT5G13970	0.006551379	0.948363911	1	0.125	1
FindAllMarkers	18	flower	Ln-II	AT4G18100-RPLn-III2A	1.99E-06	1.296127274	0.906	0.586	0.05066
FindAllMarkers	18	flower	Ln-II	AT1G29930-LHCB1.3	5.06E-05	1.582647	0.849	0.69	1
FindAllMarkers	18	flower	Ln-II	AT5G24800-BZIP9	5.36E-05	1.6313041	0.642	0.207	1
FindAllMarkers	18	flower	Ln-II	AT2G47610-RPL7AA	8.57E-05	1.074674373	0.906	0.621	1
FindAllMarkers	18	flower	Ln-II	AT2G41840-RPS2C	8.87E-05	1.790721271	0.811	0.724	1
FindAllMarkers	18	flower	Ln-II	AT5G56710-RPLn-III1C	0.000161066	1.019081191	0.925	0.517	1
FindAllMarkers	18	flower	Ln-II	AT5G65660-AT5G65660	0.000210419	1.157297308	0.66	0.276	1
FindAllMarkers	18	flower	Ln-II	AT1G29250-AT1G29250	0.000212197	0.657735283	0.434	0.034	1
FindAllMarkers	18	flower	Ln-II	AT1G15930-RPS12A	0.000301012	1.353397239	0.943	0.828	1
FindAllMarkers	18	flower	Ln-II	AT4G34670-RPS3AB	0.000352904	1.156351727	0.774	0.448	1
FindAllMarkers	18	flower	Ln-II	AT1G77510-PDIL1-2	0.000636628	0.795758176	0.434	0.069	1
FindAllMarkers	18	flower	Ln-II	AT5G42820-U2AF35B	0.000919236	0.626059083	0.528	0.138	1
FindAllMarkers	18	flower	Ln-II	AT5G02960-RPS23B	0.00101507	1.205741507	0.887	0.724	1
FindAllMarkers	18	flower	Ln-II	AT4G25200-HSP23.6	0.001118677	1.359111321	0.981	0.931	1
FindAllMarkers	18	flower	Ln-II	AT3G04920-RPS24A	0.001129781	1.057474481	0.811	0.552	1
FindAllMarkers	18	flower	Ln-II	AT5G02450-RPLn-III6C	0.001207547	1.072044283	0.849	0.655	1
FindAllMarkers	18	flower	Ln-II	AT3G22230-RPLn-II7B	0.00121001	1.118245441	0.736	0.517	1
FindAllMarkers	18	flower	Ln-II	AT5G20290-RPS8A	0.001236644	1.067366477	0.925	0.931	1
FindAllMarkers	18	flower	Ln-II	AT5G48570-FKBP65	0.001399726	1.200079845	0.887	0.828	1
FindAllMarkers	18	flower	Ln-II	AT1G52560-HSP26.5	0.001429541	1.268578811	0.849	0.552	1
FindAllMarkers	18	flower	Ln-II	AT5G62940-DOF5.6	0.001510684	1.351903967	0.453	0.138	1
FindAllMarkers	18	flower	Ln-II	AT2G41300-SSL1	0.001798547	0.78006353	0.283	0	1
FindAllMarkers	18	flower	Ln-II	AT1G09430-ACLA-3	0.001798547	0.518979768	0.283	0	1
FindAllMarkers	18	flower	Ln-II	AT3G49910-RPLn-II6A	0.001868734	1.249776882	0.811	0.724	1
FindAllMarkers	18	flower	Ln-II	AT1G07770-RPS15AF	0.002274248	1.166963094	0.868	0.69	1
FindAllMarkers	18	flower	Ln-II	AT2G19310-HSP18.5	0.002274461	1.121917543	0.849	0.655	1
FindAllMarkers	18	flower	Ln-II	AT1G24260-SEP3	0.002363975	1.086573615	0.774	0.552	1
FindAllMarkers	18	flower	Ln-II	AT1G03130-PSAD2	0.002558218	0.988184803	0.491	0.207	1
FindAllMarkers	18	flower	Ln-II	AT5G17450-HIPP21	0.002737577	0.888767551	0.434	0.103	1
FindAllMarkers	18	flower	Ln-II	AT5G09510-RPS15D	0.002967777	0.770094965	0.547	0.207	1
FindAllMarkers	18	flower	Ln-II	AT2G47110-RPS27AB	0.003622396	0.996724682	0.906	0.759	1
FindAllMarkers	18	flower	Ln-II	AT4G34200-PGDH1	0.003629163	0.652256187	0.453	0.138	1
FindAllMarkers	18	flower	Ln-II	AT5G58420-RPS4D	0.003667964	0.851595499	0.604	0.379	1
FindAllMarkers	18	flower	Ln-II	AT2G19730-RPLn-II8A	0.003723218	0.971731372	0.83	0.69	1
FindAllMarkers	18	flower	Ln-II	AT5G53120-SPDS3	0.004179894	0.975641454	0.547	0.241	1
FindAllMarkers	18	flower	Ln-II	AT1G35680-RPLn-II1	0.004243543	0.670488677	0.396	0.103	1
FindAllMarkers	18	flower	Ln-II	AT5G07090-RPS4B	0.004772801	0.932032708	0.717	0.448	1
FindAllMarkers	18	flower	Ln-II	AT4G15910-ATDI21	0.00487635	1.100856208	0.453	0.172	1
FindAllMarkers	18	flower	Ln-II	AT2G27720-AT2G27720	0.004908859	1.118029857	0.83	0.69	1
FindAllMarkers	18	flower	Ln-II	AT3G53960-NPF5.7	0.005000923	0.693035077	0.358	0.069	1

FindAllMarkers	18	flower	Ln-II	AT5G07340-AT5G07340	0.005326381	0.75882041	0.34	0.069	1
FindAllMarkers	18	flower	Ln-II	AT4G39200-RPS25E	0.006227395	1.122896679	0.962	0.862	1
FindAllMarkers	18	flower	Ln-II	AT2G17120-LYM2	0.006340721	0.895186622	0.491	0.207	1
FindAllMarkers	18	flower	Ln-II	AT2G33830-DRMH1	0.006483975	0.835958134	0.34	0.069	1
FindAllMarkers	18	flower	Ln-II	AT5G56670-RPS30A	0.006608889	0.833852121	0.566	0.276	1
FindAllMarkers	18	flower	Ln-II	AT1G22780-RPS18C	0.00706827	1.050300503	0.83	0.655	1
FindAllMarkers	18	flower	Ln-II	AT5G65480-AT5G65480	0.007265142	0.687167154	0.415	0.138	1
FindAllMarkers	18	flower	Ln-II	AT1G21900-AT1G21900	0.007317278	0.714640576	0.623	0.31	1
FindAllMarkers	18	flower	Ln-II	AT2G39460-RPLn-II3AA	0.007395215	0.864768283	0.755	0.448	1
FindAllMarkers	18	flower	Ln-II	AT5G35630-GLN2	0.007395548	0.646415092	0.396	0.103	1
FindAllMarkers	18	flower	Ln-II	AT1G29920-LHCB1.1	0.007627716	0.90742099	0.509	0.207	1
FindAllMarkers	18	flower	Ln-II	AT5G46590-anac096	0.008079708	0.909169005	0.358	0.103	1
FindAllMarkers	18	flower	Ln-II	AT2G32060-RPS12C	0.008426758	1.145152413	0.528	0.276	1
FindAllMarkers	18	flower	Ln-II	AT1G02870-AT1G02870	0.008455099	0.617281709	0.453	0.138	1
FindAllMarkers	18	flower	Ln-II	AT5G18600-GRXS2	0.008526858	1.877928613	0.717	0.483	1
FindAllMarkers	18	flower	Ln-II	AT3G14600-RPL18AC	0.008964825	0.853962739	0.83	0.621	1
FindAllMarkers	18	flower	Ln-II	AT3G07320-AT3G07320	0.009035994	0.54653656	0.321	0.069	1
FindAllMarkers	18	flower	Ln-II	AT3G09500-RPLn-III5A	0.00970247	1.060686515	0.83	0.655	1
FindAllMarkers	18	flower	Ln-III	AT1G24575-AT1G24575	1.28E-12	3.662947871	0.931	0.17	3.25E-08
FindAllMarkers	18	flower	Ln-III	AT1G67860-AT1G67860	1.20E-08	2.0971957	0.931	0.434	0.0003
FindAllMarkers	18	flower	Ln-III	AT1G62360-STM	3.03E-08	1.307696081	0.621	0.075	0.00077
FindAllMarkers	18	flower	Ln-III	AT5G09220-AAP2	1.11E-07	2.478471936	0.793	0.226	0.00283
FindAllMarkers	18	flower	Ln-III	AT1G07590-AT1G07590	1.55E-07	1.596203357	1	0.981	0.00393
FindAllMarkers	18	flower	Ln-III	AT4G01440-AT4G01440	4.01E-07	1.200178853	0.621	0.094	0.01019
FindAllMarkers	18	flower	Ln-III	AT1G66200-ATGSR2	5.56E-07	1.941867111	0.966	0.887	0.01412
FindAllMarkers	18	flower	Ln-III	AT4G01420-CBL5	9.03E-07	1.14203443	0.448	0.019	0.02294
FindAllMarkers	18	flower	Ln-III	AT4G36820-AT4G36820	1.27E-06	1.178472439	0.621	0.113	0.03231
FindAllMarkers	18	flower	Ln-III	AT1G67870-AT1G67870	4.87E-06	1.433034189	0.931	0.604	0.12383
FindAllMarkers	18	flower	Ln-III	AT3G15353-MT3	6.19E-06	2.044623565	1	0.943	0.1574
FindAllMarkers	18	flower	Ln-III	AT2G34600-TIFY 5B	1.29E-05	1.770663149	0.69	0.226	0.32775
FindAllMarkers	18	flower	Ln-III	AT2G25680-MOT1	1.65E-05	1.166330765	0.586	0.151	0.41859
FindAllMarkers	18	flower	Ln-III	AT1G70810-CAR7	3.50E-05	0.877727808	0.586	0.132	0.88899
FindAllMarkers	18	flower	Ln-III	AT5G54510-GH3.6	3.53E-05	1.758640185	0.724	0.396	0.89614
FindAllMarkers	18	flower	Ln-III	AT1G54410-HIRD11	3.68E-05	1.771999627	0.966	0.981	0.93483
FindAllMarkers	18	flower	Ln-III	AT2G18328-RL4	4.30E-05	0.843230494	0.621	0.189	1
FindAllMarkers	18	flower	Ln-III	AT1G31812-ACBP6	4.63E-05	1.092563393	1	0.943	1
FindAllMarkers	18	flower	Ln-III	AT1G19570-DHAR1	7.24E-05	1.465976261	0.931	0.698	1
FindAllMarkers	18	flower	Ln-III	AT4G18950-AT4G18950	7.44E-05	1.193707243	0.931	0.83	1
FindAllMarkers	18	flower	Ln-III	AT3G51920-CML9	8.54E-05	0.601816446	0.448	0.075	1
FindAllMarkers	18	flower	Ln-III	AT1G65480-FT	0.000100081	3.020713847	0.31	0.019	1
FindAllMarkers	18	flower	Ln-III	AT1G11700-AT1G11700	0.000107044	0.897530478	0.448	0.075	1
FindAllMarkers	18	flower	Ln-III	AT1G07300-AT1G07300	0.00011366	0.570546522	0.379	0.038	1
FindAllMarkers	18	flower	Ln-III	AT3G55120-CHI1	0.000207444	0.613978326	0.448	0.075	1
FindAllMarkers	18	flower	Ln-III	AT5G59730-ATEXO70H7	0.000216928	1.481421087	0.759	0.491	1
FindAllMarkers	18	flower	Ln-III	AT3G11680-AT3G11680	0.000268908	0.762107415	0.517	0.132	1
FindAllMarkers	18	flower	Ln-III	AT1G44100-AAP5	0.000276734	0.621452413	0.517	0.151	1
FindAllMarkers	18	flower	Ln-III	AT3G07255-AT3G07255	0.000306736	1.16278865	0.586	0.189	1
FindAllMarkers	18	flower	Ln-III	AT1G26920-AT1G26920	0.000332677	1.396131136	0.793	0.434	1
FindAllMarkers	18	flower	Ln-III	AT2G39850-SBT4.1	0.000334264	0.62858259	0.517	0.151	1
FindAllMarkers	18	flower	Ln-III	AT3G59765-AT3G59765	0.000375831	0.608479287	0.517	0.132	1
FindAllMarkers	18	flower	Ln-III	AT2G45760-BAP2	0.000405425	2.496320274	0.31	0.038	1
FindAllMarkers	18	flower	Ln-III	AT1G61820-BGLU46	0.000430082	0.657304385	0.276	0.019	1
FindAllMarkers	18	flower	Ln-III	AT1G05100-MAPKKK18	0.00051698	1.077658116	0.862	0.642	1
FindAllMarkers	18	flower	Ln-III	AT4G36570-ATRLn-III	0.0005854	1.498989607	0.31	0.038	1
FindAllMarkers	18	flower	Ln-III	AT2G42280-AT2G42280	0.000621812	0.530166056	0.31	0.038	1
FindAllMarkers	18	flower	Ln-III	AT3G21420-AT3G21420	0.000672091	1.074321019	0.759	0.358	1
FindAllMarkers	18	flower	Ln-III	AT2G32960-DSP2	0.000674776	0.512760077	0.414	0.075	1
FindAllMarkers	18	flower	Ln-III	AT2G27505-AT2G27505	0.000789568	0.737479846	0.31	0.038	1
FindAllMarkers	18	flower	Ln-III	AT3G56240-CCH	0.000877786	2.085583068	1	0.906	1
FindAllMarkers	18	flower	Ln-III	AT1G68170-AT1G68170	0.000882983	1.124671721	0.448	0.151	1
FindAllMarkers	18	flower	Ln-III	AT3G19550-AT3G19550	0.000982423	1.713254089	0.69	0.434	1
FindAllMarkers	18	flower	Ln-III	AT2G16740-UBC29	0.001153813	0.972557331	0.793	0.509	1
FindAllMarkers	18	flower	Ln-III	AT5G43180-AT5G43180	0.001265314	1.491253877	0.552	0.245	1
FindAllMarkers	18	flower	Ln-III	AT1G16705-AT1G16705	0.001431537	0.65598051	0.345	0.075	1
FindAllMarkers	18	flower	Ln-III	AT5G17860-CCX1	0.001438683	0.61223166	0.31	0.057	1
FindAllMarkers	18	flower	Ln-III	AT5G10170-IPS3	0.001460942	0.904027653	0.379	0.094	1
FindAllMarkers	18	flower	Ln-III	AT1G73040-JAL19	0.001603753	0.526207947	0.31	0.057	1
FindAllMarkers	18	flower	Ln-III	AT5G22090-AT5G22090	0.001816284	0.891826379	0.897	0.623	1
FindAllMarkers	18	flower	Ln-III	AT4G19390-AT4G19390	0.002137806	0.86930228	0.483	0.208	1
FindAllMarkers	18	flower	Ln-III	AT1G20823-ATL80	0.002438221	1.10623167	0.724	0.472	1
FindAllMarkers	18	flower	Ln-III	AT3G54340-AP3	0.002531284	0.728076927	0.414	0.113	1
FindAllMarkers	18	flower	Ln-III	AT5G57685-GDU3	0.002547639	2.344455598	0.517	0.226	1
FindAllMarkers	18	flower	Ln-III	AT5G37750-AT5G37750	0.002642359	0.857176487	0.345	0.094	1
FindAllMarkers	18	flower	Ln-III	AT3G12890-ASMLn-II	0.002855658	0.991193244	0.655	0.34	1
FindAllMarkers	18	flower	Ln-III	AT3G14560-AT3G14560	0.003056268	0.956011631	0.483	0.189	1
FindAllMarkers	18	flower	Ln-III	AT5G45630-AT5G45630	0.003232869	2.306748553	0.586	0.283	1
FindAllMarkers	18	flower	Ln-III	AT4G18280-AT4G18280	0.003564182	2.402562254	0.276	0.057	1
FindAllMarkers	18	flower	Ln-III	AT4G31730-GDU1	0.003956432	0.786262761	0.276	0.057	1
FindAllMarkers	18	flower	Ln-III	AT3G62960-GRXC14	0.004506171	1.14131513	0.483	0.17	1
FindAllMarkers	18	flower	Ln-III	AT1G02630-ETN8	0.005002921	0.537418439	0.31	0.075	1

FindAllMarkers	18	flower	Ln-III	AT3G03170-AT3G03170	0.00562685	0.63866787	0.345	0.113	1
FindAllMarkers	18	flower	Ln-III	AT4G12410-AT4G12410	0.005665693	1.122777941	0.586	0.34	1
FindAllMarkers	18	flower	Ln-III	AT5G56550-OXS3	0.005972888	0.60716762	0.724	0.434	1
FindAllMarkers	18	flower	Ln-III	AT1G23730-BCA3	0.00632244	0.78344464	0.31	0.075	1
FindAllMarkers	18	flower	Ln-III	AT5G42650-CYP74A	0.007714135	1.890041038	0.828	0.736	1
FindAllMarkers	18	flower	Ln-III	AT1G77450-NAC032	0.008159902	0.829701744	0.793	0.547	1
FindAllMarkers	18	flower	Ln-III	AT5G64260-EXLn-II	0.008727506	0.710187038	0.793	0.528	1

Method	Cluster	Tissue	Lineage	Gene	Score
COSG	6	leaf	Ln-II	AT5G40690-AT5G40690	0.424128686
COSG	6	leaf	Ln-II	AT4G37990-CAD8	0.425583863
COSG	6	leaf	Ln-II	AT1G22400-UGT85A1	0.435825463
COSG	6	leaf	Ln-II	AT2G37970-SOUL-1	0.436261951
COSG	6	leaf	Ln-II	AT1G78380-GSTU19	0.437169493
COSG	6	leaf	Ln-II	ATCG00020-PSBA	0.443927346
COSG	6	leaf	Ln-II	AT4G24972-TPD1	0.447157887
COSG	6	leaf	Ln-II	AT1G75270-DHAR2	0.45474025
COSG	6	leaf	Ln-II	AT1G62180-APR2	0.462309302
COSG	6	leaf	Ln-II	AT1G17170-GSTU24	0.467860387
COSG	6	leaf	Ln-II	AT2G15320-AT2G15320	0.476956609
COSG	6	leaf	Ln-II	AT5G16970-AER	0.478480193
COSG	6	leaf	Ln-II	AT1G37130-NIA2	0.507869861
COSG	6	leaf	Ln-II	AT5G17000-AT5G17000	0.553334766
COSG	6	leaf	Ln-III	AT2G22860-PSK2	0.379150988
COSG	6	leaf	Ln-III	AT5G13700-PAO1	0.382729798
COSG	6	leaf	Ln-III	AT2G01670-NUDT17	0.383112719
COSG	6	leaf	Ln-III	AT2G32720-CYTB5-B	0.386134719
COSG	6	leaf	Ln-III	AT1G68795-CLE12	0.386730784
COSG	6	leaf	Ln-III	AT5G37770-CMLn-II4	0.388199206
COSG	6	leaf	Ln-III	AT4G33930-AT4G33930	0.388960718
COSG	6	leaf	Ln-III	AT3G56090-FER3	0.390597919
COSG	6	leaf	Ln-III	AT1G25560-TEM1	0.391080817
COSG	6	leaf	Ln-III	AT1G43160-RAP2-6	0.395416126
COSG	6	leaf	Ln-III	AT1G52342-AT1G52342	0.397674264
COSG	6	leaf	Ln-III	AT5G54300-AT5G54300	0.398926797
COSG	6	leaf	Ln-III	AT2G44790-UCC2	0.398966653
COSG	6	leaf	Ln-III	AT5G01600-FER1	0.400019226
COSG	6	leaf	Ln-III	AT2G37180-PIP2-3	0.400550979
COSG	6	leaf	Ln-III	AT1G80820-CCR2	0.401004269
COSG	6	leaf	Ln-III	AT5G50450-AT5G50450	0.405670552
COSG	6	leaf	Ln-III	AT2G22850-AtbZIP6	0.407074628
COSG	6	leaf	Ln-III	AT5G19230-AT5G19230	0.411228521
COSG	6	leaf	Ln-III	AT1G55330-AGP21	0.415754989
COSG	6	leaf	Ln-III	AT1G07150-MAPKKK13	0.420790495
COSG	6	leaf	Ln-III	AT1G73500-MKK9	0.422510765
COSG	6	leaf	Ln-III	AT2G44840-ERF13	0.424045976
COSG	6	leaf	Ln-III	AT5G55180-AT5G55180	0.425677199
COSG	6	leaf	Ln-III	AT3G15450-AT3G15450	0.429097874
COSG	6	leaf	Ln-III	AT4G28150-AT4G28150	0.430314703
COSG	6	leaf	Ln-III	AT4G09460-MYB6	0.434176233
COSG	6	leaf	Ln-III	AT2G26690-NPF6.2	0.438519046
COSG	6	leaf	Ln-III	AT1G64660-MGL	0.454277039
COSG	6	leaf	Ln-III	AT5G52400-CYP715A1	0.455346026
COSG	6	leaf	Ln-III	AT1G74100-SOT16	0.455944015
COSG	6	leaf	Ln-III	AT5G57560-XTH22	0.463039941
COSG	6	leaf	Ln-III	AT5G60680-AT5G60680	0.466119173
COSG	6	flower	Ln-II	AT3G14990-DJ1A	0.621608078
COSG	6	flower	Ln-III	AT1G29195-AT1G29195	0.20313434
COSG	6	flower	Ln-III	AT1G66480-AT1G66480	0.204615871
COSG	6	flower	Ln-III	AT1G25400-AT1G25400	0.205639662
COSG	6	flower	Ln-III	AT1G15670-AT1G15670	0.206005355
COSG	6	flower	Ln-III	AT1G67920-AT1G67920	0.206354417
COSG	6	flower	Ln-III	AT1G47130-AT1G47130	0.206494938
COSG	6	flower	Ln-III	AT2G22800-HAT9	0.206743877
COSG	6	flower	Ln-III	AT4G17670-FLZ2	0.207495142
COSG	6	flower	Ln-III	AT5G19230-AT5G19230	0.208048314
COSG	6	flower	Ln-III	AT5G23510-AT5G23510	0.208094298
COSG	6	flower	Ln-III	AT4G36500-AT4G36500	0.208448911
COSG	6	flower	Ln-III	AT3G50900-AT3G50900	0.209402844
COSG	6	flower	Ln-III	AT3G48450-AT3G48450	0.20968386
COSG	6	flower	Ln-III	AT5G65630-GTE7	0.210110782
COSG	6	flower	Ln-III	AT1G09560-GLP4	0.211102304
COSG	6	flower	Ln-III	AT2G22500-PUMP5	0.211509393
COSG	6	flower	Ln-III	AT1G46480-WOX4	0.212042554
COSG	6	flower	Ln-III	AT1G01470-LEA14	0.2122893
COSG	6	flower	Ln-III	AT1G76650-CMLn-III8	0.213166166
COSG	6	flower	Ln-III	AT5G51105-AT5G51105	0.214307291
COSG	6	flower	Ln-III	AT4G34470-ASK12	0.214348903

COSG	6	flower	Ln-III	AT1G80120-AT1G80120	0.2148658
COSG	6	flower	Ln-III	AT2G37180-PIP2-3	0.21602546
COSG	6	flower	Ln-III	AT3G20300-AT3G20300	0.216597904
COSG	6	flower	Ln-III	AT2G45450-ZPR1	0.216934903
COSG	6	flower	Ln-III	AT4G21920-AT4G21920	0.218074765
COSG	6	flower	Ln-III	AT5G15870-AT5G15870	0.218129087
COSG	6	flower	Ln-III	AT2G44790-UCC2	0.218657077
COSG	6	flower	Ln-III	AT5G50950-FUM2	0.218839139
COSG	6	flower	Ln-III	AT5G38240-AT5G38240	0.220279198
COSG	6	flower	Ln-III	AT5G61590-ERF107	0.22048168
COSG	6	flower	Ln-III	AT1G32127-AT1G32127	0.220550556
COSG	6	flower	Ln-III	AT2G31560-AT2G31560	0.22280998
COSG	6	flower	Ln-III	AT4G33930-AT4G33930	0.224366891
COSG	6	flower	Ln-III	AT5G24655-LSU4	0.226572969
COSG	6	flower	Ln-III	AT5G53200-TRY	0.227781247
COSG	6	flower	Ln-III	AT4G11360-RHA1B	0.227843285
COSG	6	flower	Ln-III	AT2G04795-AT2G04795	0.227850926
COSG	6	flower	Ln-III	AT1G14540-PER4	0.228383803
COSG	6	flower	Ln-III	AT1G07135-AT1G07135	0.228601437
COSG	6	flower	Ln-III	AT1G35210-AT1G35210	0.229052092
COSG	6	flower	Ln-III	AT3G50770-CML41	0.230101467
COSG	6	flower	Ln-III	AT3G23170-AT3G23170	0.230166947
COSG	6	flower	Ln-III	AT5G28646-WVD2	0.232756614
COSG	6	flower	Ln-III	AT3G16240-TIP2-1	0.233058145
COSG	6	flower	Ln-III	AT5G49450-BZIP1	0.233733169
COSG	6	flower	Ln-III	AT5G63160-BT1	0.235673621
COSG	6	flower	Ln-III	AT2G37430-ZAT11	0.236979589
COSG	6	flower	Ln-III	AT1G66725-MIR163	0.238076526
COSG	6	flower	Ln-III	AT5G60680-AT5G60680	0.240891161
COSG	6	flower	Ln-III	AT4G21390-B120	0.241886435
COSG	6	flower	Ln-III	AT3G04220-AT3G04220	0.244035115
COSG	6	flower	Ln-III	AT2G15960-AT2G15960	0.245256088
COSG	6	flower	Ln-III	AT3G48360-BT2	0.245658158
COSG	6	flower	Ln-III	AT1G32540-LOL1	0.254448152
COSG	6	flower	Ln-III	AT1G08940-AT1G08940	0.255823553
COSG	6	flower	Ln-III	AT3G53600-AT3G53600	0.263020631
COSG	6	flower	Ln-III	AT4G20780-CML42	0.263117675
COSG	6	flower	Ln-III	AT3G13660-DIR22	0.264139241
COSG	6	flower	Ln-III	AT4G14450-AT4G14450	0.270823329
COSG	6	flower	Ln-III	AT2G30362-AT2G30362	0.272863608
COSG	6	flower	Ln-III	AT5G45630-AT5G45630	0.274613812
COSG	6	flower	Ln-III	AT5G05220-AT5G05220	0.284017304
COSG	6	flower	Ln-III	AT1G62360-STM	0.286546301
COSG	6	flower	Ln-III	AT3G13650-DIR7	0.309616985
COSG	13	leaf	Ln-II	AT3G47470-LHCA4	0.477564178
COSG	13	leaf	Ln-II	AT5G26340-STP13	0.478643218
COSG	13	leaf	Ln-II	AT5G46110-APE2	0.480108997
COSG	13	leaf	Ln-II	AT3G02080-RPS19A	0.48305965
COSG	13	leaf	Ln-II	AT1G78380-GSTU19	0.4865294
COSG	13	leaf	Ln-II	AT1G64720-CP5	0.488586276
COSG	13	leaf	Ln-II	AT5G51830-AT5G51830	0.497692926
COSG	13	leaf	Ln-II	AT1G21830-AT1G21830	0.50099341
COSG	13	leaf	Ln-II	AT4G36040-ATJ11	0.504247677
COSG	13	leaf	Ln-II	AT2G46370-JAR1	0.518218728
COSG	13	leaf	Ln-II	AT1G37130-NIA2	0.519503854
COSG	13	leaf	Ln-II	AT1G16030-HSP70-5	0.521500617
COSG	13	leaf	Ln-II	AT2G33380-PXG3	0.523670512
COSG	13	leaf	Ln-II	AT4G37980-CAD7	0.543093904
COSG	13	leaf	Ln-II	AT3G18560-AT3G18560	0.546799691
COSG	13	leaf	Ln-II	AT2G15960-AT2G15960	0.547896484
COSG	13	leaf	Ln-III	AT2G43120-AT2G43120	0.327604091
COSG	13	leaf	Ln-III	AT5G53750-AT5G53750	0.329968538
COSG	13	leaf	Ln-III	AT5G01380-GT-3A	0.331474119
COSG	13	leaf	Ln-III	AT1G64660-MGL	0.331702752
COSG	13	leaf	Ln-III	AT2G04400-IGPS	0.332268224
COSG	13	leaf	Ln-III	AT3G49570-LSU3	0.332577125
COSG	13	leaf	Ln-III	AT3G22910-ACA13	0.332770448
COSG	13	leaf	Ln-III	AT3G45140-LOX2	0.332872657
COSG	13	leaf	Ln-III	AT5G55120-VTC5	0.333523748
COSG	13	leaf	Ln-III	AT2G41410-CMLn-III5	0.333662015
COSG	13	leaf	Ln-III	AT4G27654-AT4G27654	0.334085219
COSG	13	leaf	Ln-III	AT2G47260-WRKY23	0.334157236
COSG	13	leaf	Ln-III	AT4G39260-RBG8	0.335173156
COSG	13	leaf	Ln-III	AT3G16050-PDX12	0.336734618
COSG	13	leaf	Ln-III	AT5G45630-AT5G45630	0.338548455
COSG	13	leaf	Ln-III	AT1G06550-AT1G06550	0.339157232
COSG	13	leaf	Ln-III	AT5G47640-NFYB2	0.344667001
COSG	13	leaf	Ln-III	AT2G39200-MLO12	0.345344589
COSG	13	leaf	Ln-III	AT2G37040-PAL1	0.345457035
COSG	13	leaf	Ln-III	AT5G28237-AT5G28237	0.346926988

COSG	13	leaf	Ln-III	AT2G31230-ERF15	0.347517889
COSG	13	leaf	Ln-III	AT1G70000-AT1G70000	0.34879091
COSG	13	leaf	Ln-III	AT5G22630-ADT5	0.351800832
COSG	13	leaf	Ln-III	AT3G47340-ASN1	0.352215409
COSG	13	leaf	Ln-III	AT2G18160-BZIP2	0.352529255
COSG	13	leaf	Ln-III	AT3G02480-AT3G02480	0.354920529
COSG	13	leaf	Ln-III	AT5G09470-PUMP6	0.356812365
COSG	13	leaf	Ln-III	AT4G31500-CYP83B1	0.360218336
COSG	13	leaf	Ln-III	AT2G24850-TAT3	0.366254985
COSG	13	leaf	Ln-III	AT3G25870-AT3G25870	0.368514368
COSG	13	leaf	Ln-III	AT3G63380-ACA12	0.369886591
COSG	13	leaf	Ln-III	AT5G38310-AT5G38310	0.372926171
COSG	13	leaf	Ln-III	AT5G21940-AT5G21940	0.374468245
COSG	13	leaf	Ln-III	AT1G26910-RPL10B	0.387779104
COSG	13	leaf	Ln-III	AT1G74100-SOT16	0.394791021
COSG	13	leaf	Ln-III	AT4G13930-SHM4	0.401357985
COSG	13	leaf	Ln-III	AT1G30135-TIFY5A	0.412404005
COSG	13	leaf	Ln-III	AT3G61190-BAP1	0.440907881
COSG	13	leaf	Ln-III	AT2G46650-CYTB5-C	0.447663996
COSG	13	flower	Ln-II	AT1G03220-AT1G03220	0.708512417
COSG	13	flower	Ln-II	AT5G25450-QCR7-2	0.709012355
COSG	13	flower	Ln-II	AT1G55450-AT1G55450	0.711096679
COSG	13	flower	Ln-II	AT5G51440-HSP23.5	0.717349197
COSG	13	flower	Ln-II	AT2G02010-GAD4	0.718697546
COSG	13	flower	Ln-II	AT5G22250-CAF1-11	0.719402846
COSG	13	flower	Ln-II	AT3G07090-AT3G07090	0.720761064
COSG	13	flower	Ln-II	AT1G70140-FH8	0.726094567
COSG	13	flower	Ln-II	AT1G53540-HSP17.6C	0.729563334
COSG	13	flower	Ln-II	AT5G58070-TIL	0.73020566
COSG	13	flower	Ln-II	AT2G41100-CML12	0.731757152
COSG	13	flower	Ln-II	AT4G08555-AT4G08555	0.732368518
COSG	13	flower	Ln-II	AT1G65690-NHL6	0.733126034
COSG	13	flower	Ln-II	AT5G54760-AT5G54760	0.737215382
COSG	13	flower	Ln-II	AT5G10980-HTR8	0.743653287
COSG	13	flower	Ln-II	AT5G03030-AT5G03030	0.755211212
COSG	13	flower	Ln-II	AT5G57123-AT5G57123	0.756843269
COSG	13	flower	Ln-II	AT4G21990-APR3	0.762571081
COSG	13	flower	Ln-II	AT3G13110-SAT3	0.768160735
COSG	13	flower	Ln-II	AT4G37990-CAD8	0.792776408
COSG	13	flower	Ln-III	AT1G21670-AT1G21670	0.602589224
COSG	13	flower	Ln-III	AT4G38740-CYP18-3	0.603642565
COSG	13	flower	Ln-III	AT4G17870-PYR1	0.607685522
COSG	13	flower	Ln-III	AT1G10280-AT1G10280	0.622449986
COSG	13	flower	Ln-III	AT3G28150-AXY4L	0.628696987
COSG	13	flower	Ln-III	AT3G10400-SNRNP31	0.630949976
COSG	13	flower	Ln-III	AT1G14640-AT1G14640	0.632255069
COSG	13	flower	Ln-III	AT3G27880-AT3G27880	0.632255069
COSG	13	flower	Ln-III	AT1G79510-AT1G79510	0.632433104
COSG	13	flower	Ln-III	AT3G04850-TCX4	0.632433104
COSG	13	flower	Ln-III	AT4G33905-AT4G33905	0.633863677
COSG	13	flower	Ln-III	AT5G58620-AT5G58620	0.648921911
COSG	13	flower	Ln-III	AT3G07350-AT3G07350	0.655030103
COSG	13	flower	Ln-III	AT3G13275-AT3G13275	0.67416482
COSG	13	flower	Ln-III	AT3G61890-ATHB-12	0.714508797
COSG	13	flower	Ln-III	AT5G20700-FLZ14	0.726390994
COSG	13	flower	Ln-III	AT4G37730-AtbZIP7	0.734588313
COSG	13	flower	Ln-III	AT4G20260-PCAP1	0.736895352
COSG	13	flower	Ln-III	AT3G16800-AT3G16800	0.840998885
COSG	18	leaf	Ln-II	AT3G15210-ERF4	0.753143592
COSG	18	leaf	Ln-II	AT2G01180-ATPAP1	0.767911105
COSG	18	leaf	Ln-II	AT1G28330-DRM1	0.768551424
COSG	18	leaf	Ln-II	AT4G01480-PPA5	0.774193164
COSG	18	leaf	Ln-II	AT1G48420-DCD	0.797587738
COSG	18	leaf	Ln-II	AT1G11650-RBP45B	0.798044088
COSG	18	leaf	Ln-II	AT1G42990-BZIP60	0.82783445
COSG	18	leaf	Ln-II	AT3G15353-MT3	0.834558701
COSG	18	leaf	Ln-II	AT3G56710-SIB1	0.856252732
COSG	18	leaf	Ln-II	AT2G41430-ERD15	0.856992478
COSG	18	leaf	Ln-III	AT2G23150-NRAMP3	0.803237472
COSG	18	leaf	Ln-III	AT1G51090-AT1G51090	0.808247985
COSG	18	leaf	Ln-III	AT5G40720-AT5G40720	0.808321696
COSG	18	leaf	Ln-III	AT2G35390-PRS1	0.808321696
COSG	18	leaf	Ln-III	AT2G34140-CDF4	0.809864407
COSG	18	leaf	Ln-III	AT3G27270-AT3G27270	0.812052072
COSG	18	leaf	Ln-III	AT4G25380-SAP10	0.812052072
COSG	18	leaf	Ln-III	AT2G18680-AT2G18680	0.813366224
COSG	18	leaf	Ln-III	AT2G23450-WAKL14	0.81521556
COSG	18	leaf	Ln-III	AT5G12040-NLP3	0.815736161
COSG	18	leaf	Ln-III	AT1G24440-AT1G24440	0.815857076
COSG	18	leaf	Ln-III	AT3G12390-AT3G12390	0.815857076

COSG	18	leaf	Ln-III	AT4G24290-AT4G24290	0.815857076
COSG	18	leaf	Ln-III	AT2G22860-PSK2	0.81589571
COSG	18	leaf	Ln-III	AT2G30230-AT2G30230	0.816038543
COSG	18	leaf	Ln-III	AT3G09270-GSTU8	0.816448573
COSG	18	leaf	Ln-III	AT1G72680-CAD1	0.816493955
COSG	18	leaf	Ln-III	AT5G66120-DHQS	0.816493955
COSG	18	leaf	Ln-III	AT3G04010-AT3G04010	0.816493955
COSG	18	leaf	Ln-III	AT3G46440-UXS5	0.816493955
COSG	18	leaf	Ln-III	AT3G54200-AT3G54200	0.816493955
COSG	18	leaf	Ln-III	AT1G29195-AT1G29195	0.817915243
COSG	18	leaf	Ln-III	AT3G49540-AT3G49540	0.823730624
COSG	18	leaf	Ln-III	AT5G27840-TOPP8	0.825010435
COSG	18	leaf	Ln-III	AT4G03430-STA1	0.848530893
COSG	18	leaf	Ln-III	AT2G31680-RABA5D	0.848546972
COSG	18	leaf	Ln-III	AT5G40960-AT5G40960	0.849188217
COSG	18	leaf	Ln-III	AT5G51830-AT5G51830	0.852897905
COSG	18	leaf	Ln-III	AT5G11730-AT5G11730	0.856336616
COSG	18	leaf	Ln-III	AT3G50970-XERO2	0.901139748
COSG	18	leaf	Ln-III	AT5G13970-AT5G13970	0.906042302
COSG	18	leaf	Ln-III	AT3G02740-AT3G02740	0.908442861
COSG	18	leaf	Ln-III	AT5G39050-PMAT1	0.913355696
COSG	18	leaf	Ln-III	ATCG00790-RPL16	0.91711276
COSG	18	leaf	Ln-III	AT2G43620-AT2G43620	0.922315006
COSG	18	leaf	Ln-III	AT1G70590-AT1G70590	0.925034746
COSG	18	leaf	Ln-III	AT4G37250-AT4G37250	0.93524592
COSG	18	leaf	Ln-III	AT5G52570-BETA-OHASE	0.940595633
COSG	18	leaf	Ln-III	AT5G51880-AT5G51880	0.94564542
COSG	18	leaf	Ln-III	AT2G31585-AT2G31585	0.946936545
COSG	18	leaf	Ln-III	AT5G52310-RD29A	0.95134888
COSG	18	leaf	Ln-III	AT2G23950-AT2G23950	0.961596729
COSG	18	leaf	Ln-III	AT2G27830-AT2G27830	0.96806699
COSG	18	flower	Ln-II	AT5G20290-RPS8A	0.644144648
COSG	18	flower	Ln-II	AT2G19730-RPLn-II8A	0.644721492
COSG	18	flower	Ln-II	AT1G24260-SEP3	0.651132755
COSG	18	flower	Ln-II	AT2G47110-RPS27AB	0.653350404
COSG	18	flower	Ln-II	AT5G48570-FKBP65	0.656797428
COSG	18	flower	Ln-II	AT3G04920-RPS24A	0.659535644
COSG	18	flower	Ln-II	AT2G19310-HSP18.5	0.660131793
COSG	18	flower	Ln-II	AT1G07770-RPS15AF	0.661513143
COSG	18	flower	Ln-II	AT3G49910-RPLn-II6A	0.662989823
COSG	18	flower	Ln-II	AT4G25200-HSP23.6	0.665101982
COSG	18	flower	Ln-II	AT5G02450-RPLn-III6C	0.667764647
COSG	18	flower	Ln-II	AT3G22230-RPLn-II7B	0.669110553
COSG	18	flower	Ln-II	AT5G24800-BZIP9	0.67352034
COSG	18	flower	Ln-II	AT5G02960-RPS23B	0.674034501
COSG	18	flower	Ln-II	AT5G65660-AT5G65660	0.683705731
COSG	18	flower	Ln-II	AT1G15930-RPS12A	0.685679623
COSG	18	flower	Ln-II	AT4G34670-RPS3AB	0.686268461
COSG	18	flower	Ln-II	AT5G56710-RPLn-III1C	0.712616104
COSG	18	flower	Ln-II	AT1G29930-LHCB1.3	0.714491865
COSG	18	flower	Ln-II	AT2G47610-RPL7AA	0.718327651
COSG	18	flower	Ln-II	AT2G41840-RPS2C	0.724704263
COSG	18	flower	Ln-II	AT4G18100-RPLn-III2A	0.767825056
COSG	18	flower	Ln-III	AT1G02630-ETN8	0.419608134
COSG	18	flower	Ln-III	AT5G52120-PP2A14	0.419979688
COSG	18	flower	Ln-III	AT4G37590-NPY5	0.420467892
COSG	18	flower	Ln-III	AT1G73040-JAL19	0.421714702
COSG	18	flower	Ln-III	AT5G42650-CYP74A	0.422653458
COSG	18	flower	Ln-III	AT1G61930-AT1G61930	0.423521337
COSG	18	flower	Ln-III	AT3G54340-AP3	0.425458444
COSG	18	flower	Ln-III	AT1G12610-DREB1F	0.425740867
COSG	18	flower	Ln-III	AT3G50440-MES10	0.426073614
COSG	18	flower	Ln-III	AT1G05100-MAPKKK18	0.429412894
COSG	18	flower	Ln-III	AT1G70640-AT1G70640	0.430079108
COSG	18	flower	Ln-III	AT2G16740-UBC29	0.431643159
COSG	18	flower	Ln-III	AT3G12890-ASMLn-II	0.434548444
COSG	18	flower	Ln-III	AT4G18950-AT4G18950	0.434802273
COSG	18	flower	Ln-III	AT1G67865-AT1G67865	0.436328376
COSG	18	flower	Ln-III	AT4G18280-AT4G18280	0.440673547
COSG	18	flower	Ln-III	AT4G26640-WRKY20	0.441892053
COSG	18	flower	Ln-III	AT1G20823-ATL80	0.443011723
COSG	18	flower	Ln-III	AT5G37750-AT5G37750	0.445342033
COSG	18	flower	Ln-III	AT5G60400-AT5G60400	0.446960354
COSG	18	flower	Ln-III	AT3G55120-CHI1	0.447478583
COSG	18	flower	Ln-III	AT3G14560-AT3G14560	0.449171408
COSG	18	flower	Ln-III	AT2G42280-AT2G42280	0.450007777
COSG	18	flower	Ln-III	AT4G12410-AT4G12410	0.450729388
COSG	18	flower	Ln-III	AT3G11680-AT3G11680	0.45168253
COSG	18	flower	Ln-III	AT5G18690-AGP25	0.452059565
COSG	18	flower	Ln-III	AT4G31730-GDU1	0.454239742

COSG	18	flower	Ln-III	AT2G18190-AT2G18190	0.45448942
COSG	18	flower	Ln-III	AT1G61820-BGLU46	0.454762005
COSG	18	flower	Ln-III	AT1G64780-AMT1-2	0.457783
COSG	18	flower	Ln-III	AT4G36570-ATRLn-III	0.459801181
COSG	18	flower	Ln-III	AT3G03170-AT3G03170	0.459950042
COSG	18	flower	Ln-III	AT5G17860-CCX1	0.460167987
COSG	18	flower	Ln-III	AT3G59765-AT3G59765	0.461456807
COSG	18	flower	Ln-III	AT2G27505-AT2G27505	0.461618498
COSG	18	flower	Ln-III	AT3G21420-AT3G21420	0.463794729
COSG	18	flower	Ln-III	AT2G39850-SBT4.1	0.46412749
COSG	18	flower	Ln-III	AT1G19570-DHAR1	0.466878462
COSG	18	flower	Ln-III	AT5G10170-IPS3	0.467212391
COSG	18	flower	Ln-III	AT1G44100-AAP5	0.470469947
COSG	18	flower	Ln-III	AT5G45630-AT5G45630	0.472594976
COSG	18	flower	Ln-III	AT1G16705-AT1G16705	0.4769507
COSG	18	flower	Ln-III	AT3G51920-CML9	0.478415909
COSG	18	flower	Ln-III	AT1G66200-ATGSR2	0.482928786
COSG	18	flower	Ln-III	AT3G19550-AT3G19550	0.488269016
COSG	18	flower	Ln-III	AT1G26920-AT1G26920	0.495643939
COSG	18	flower	Ln-III	AT4G19390-AT4G19390	0.499123178
COSG	18	flower	Ln-III	AT5G57685-GDU3	0.512133832
COSG	18	flower	Ln-III	AT2G45760-BAP2	0.514096346
COSG	18	flower	Ln-III	AT5G59730-ATEXO70H7	0.515361034
COSG	18	flower	Ln-III	AT1G11700-AT1G11700	0.515854079
COSG	18	flower	Ln-III	AT3G07255-AT3G07255	0.520740271
COSG	18	flower	Ln-III	AT1G67870-AT1G67870	0.522415102
COSG	18	flower	Ln-III	AT2G18328-RL4	0.523205772
COSG	18	flower	Ln-III	AT5G43180-AT5G43180	0.52678264
COSG	18	flower	Ln-III	AT1G70810-CAR7	0.533093196
COSG	18	flower	Ln-III	AT1G65480-FT	0.536634488
COSG	18	flower	Ln-III	AT1G68170-AT1G68170	0.542384913
COSG	18	flower	Ln-III	AT5G54510-GH3.6	0.582015333
COSG	18	flower	Ln-III	AT2G34600-TIFY 5B	0.587234444
COSG	18	flower	Ln-III	AT4G01420-CBL5	0.594527725
COSG	18	flower	Ln-III	AT2G25680-MOT1	0.603155596
COSG	18	flower	Ln-III	AT4G36820-AT4G36820	0.625157138
COSG	18	flower	Ln-III	AT4G01440-AT4G01440	0.641830341
COSG	18	flower	Ln-III	AT1G67860-AT1G67860	0.684591809
COSG	18	flower	Ln-III	AT5G09220-AAP2	0.695713197
COSG	18	flower	Ln-III	AT1G62360-STM	0.730496009
COSG	18	flower	Ln-III	AT1G24575-AT1G24575	0.846780747

Table S8 | Primers used in this study.

Name	Sequence	Usage
UNG-LP	GGATCATCTCTACTTGTGTTGTGC	genotyping of <i>ung</i> T-DNA mutant
UNG-RP	GTTTGCCACTACTGAGCC	
LB3	CCCATTGAGCGTGAATGTAGACAC	genotyping of <i>msh2</i> mutant
MSH2-LP	GATCGCAAGGTGAGTTCAATTG	
MSH2-RP	CCGCACTTCAATCTGCT	genotyping of T-DNA insertions in Fig.S1
P1	GCATGAATGGTCAAGACTTGTGTC	
P2	GCGGCCGTCTGGACCGATGGC	
P3	GTCCGGTCCTGCCCCGTCACCG	
P4	CATCTCCTGCCATAGATCCTAC	
P5	GGTTGATGATCAAGGTCCATC	
P6	CATGGTCCTGCTGGAGTTCGTG	
P7	CCAACTTAGTACACCCTAAATCG	
P8	CATCTTGTAGAGCCGTGGGAAG	
P9	GAATCGCCAGCAACAGAATCTC	
CP2	CCTTAGCCGCTAATAGGTGAGC	Plant-2 Barcode A amplification from genome
P7	CCAACTTAGTACACCCTAAATCG	
P8	CATCTTGTAGAGCCGTGGGAAG	Plant-2 Barcode B amplification from genome
CP2	CCTTAGCCGCTAATAGGTGAGC	
DXR-RT-F	CGCCTCGTCAATCTTGGGATGGACC	reference genes for copy number evaluation through QRT-PCR
DXR-RT-R	CTCAGCCACAATATCCAATGTCTGC	
FREE1-RT-F	CAGAATTACACTCCTTACGGGC	RFP fragment for copy number evaluation through QRT-PCR
FREE1-RT-R	GCGAGGTAGGTTGCTGATACGG	
RFP-RT-1F	TGCACATGGAGGCGAGCATG	UMI primers for 1st round of PCR for 1-kb barcode sequence amplification from genomics
RFP-RT-1R	GTAGTCGGGGATGTCGGCGG	
RFP-RT-2F	GCTGAGAGGCACCAACTTCC	24 pairs of primers with sample index for 2nd round of PCR for 1-kb barcode sequence amplification from genomics
RFP-RT-2R	CCTCGGATCTCTCGTACTGC	
BS21-F-UMI	CAAGCAGAAGACGGCATAACGAGAT NNNYRNNNNYRNNNNYRNNN	
	TCCCACGGCGACCACTTCG	
CP2-RUMI	AATGATACGGCGACCAACCGAGATC NNNYRNNNNYRNNNNYRNNN	
	CCTTAGCCGCTAATAGGTGAGC	
BC01-F	CACATATCAGAGTGCGCAAGCAGAAGACGGCATAACGAGAT	
BC02-F	ACACACGCGAGACAGACAAGCAGAAGACGGCATAACGAGAT	
BC03-F	ACGCGCTATCTCAGAGCAAGCAGAAGACGGCATAACGAGAT	
BC04-F	CACACGCGCGCTATATCAAGCAGAAGACGGCATAACGAGAT	
BC05-F	ACACACTCTATCAGATCAAGCAGAAGACGGCATAACGAGAT	
BC06-F	CTATACATAGTGATGTCAAGCAGAAGACGGCATAACGAGAT	
BC07-F	TATATATGTCTATAGACAAGCAGAAGACGGCATAACGAGAT	
BC08-F	GAGACTAGAGATAGTGCAAGCAGAAGACGGCATAACGAGAT	
BC09-F	ATGTGTATATAGATATCAAGCAGAAGACGGCATAACGAGAT	
BC10-F	GCGCGCGCACTCTCTGCAAGCAGAAGACGGCATAACGAGAT	
BC11-F	GTGTGTCTCGATGCGCCAAGCAGAAGACGGCATAACGAGAT	
BC12-F	TGTCATATGAGAGTGTCAAGCAGAAGACGGCATAACGAGAT	
BC13-F	TCTCGCGCGTGACGCCAAGCAGAAGACGGCATAACGAGAT	
BC14-F	GATATATCGAGTATATCAAGCAGAAGACGGCATAACGAGAT	
BC15-F	GTGTGCACTCAGCTCCAAGCAGAAGACGGCATAACGAGAT	
BC16-F	CGTGTCTAGCGCGCGCCAAGCAGAAGACGGCATAACGAGAT	
BC17-F	GTGTGAGATATATATCAAGCAGAAGACGGCATAACGAGAT	
BC18-F	GCGCACGCACTACAGACAAGCAGAAGACGGCATAACGAGAT	
BC19-F	CACACGAGATCTCATCAAGCAGAAGACGGCATAACGAGAT	
BC20-F	AGACACACGACACATCAAGCAGAAGACGGCATAACGAGAT	
BC21-F	TCTCAGATAGTCTATACAAGCAGAAGACGGCATAACGAGAT	
BC22-F	TGCTCTCGTGTACTGTCAAGCAGAAGACGGCATAACGAGAT	
BC23-F	TAGAGAGCGTCGCGTGCAAGCAGAAGACGGCATAACGAGAT	
BC24-F	GTGACACACAGAGCACCAAGCAGAAGACGGCATAACGAGAT	
BC01-R	CGCACTCTGATATGTGAATGATACGGCGACCAACCGAGATC	
BC02-R	TCTGTCTCGCGTGTGAATGATACGGCGACCAACCGAGATC	
BC03-R	CTCTGAGATAGCGCGTAATGATACGGCGACCAACCGAGATC	
BC04-R	ATATAGCGCGGTGTGAATGATACGGCGACCAACCGAGATC	
BC05-R	ATCTGATAGAGTGTGAATGATACGGCGACCAACCGAGATC	
BC06-R	ACATCACTATGTATAGAATGATACGGCGACCAACCGAGATC	
BC07-R	TCTATAGACATATATAAATGATACGGCGACCAACCGAGATC	
BC08-R	CACTATCTCTAGTCTCAATGATACGGCGACCAACCGAGATC	
BC09-R	ATATCTATATACATAATGATACGGCGACCAACCGAGATC	
BC10-R	CAGAGAGTGCGCGCAATGATACGGCGACCAACCGAGATC	
BC11-R	GCGCATCGAGACACACAATGATACGGCGACCAACCGAGATC	
BC12-R	AACTCTCATATGACAAATGATACGGCGACCAACCGAGATC	
BC13-R	GCGTGACGCGCGAGAAATGATACGGCGACCAACCGAGATC	
BC14-R	ATATACTCGATATATCAATGATACGGCGACCAACCGAGATC	
BC15-R	GAGTGTGAGTGCACACAATGATACGGCGACCAACCGAGATC	
BC16-R	GCGCGCGCTAGACACGAATGATACGGCGACCAACCGAGATC	
BC17-R	GATATATATCTCACACAATGATACGGCGACCAACCGAGATC	
BC18-R	TCTGTAGTGCGTGCGCAATGATACGGCGACCAACCGAGATC	
BC19-R	GATGAGATCTCGTGTGAATGATACGGCGACCAACCGAGATC	
BC20-R	ATGTGCGTGTGTGTCTAATGATACGGCGACCAACCGAGATC	

BC21-R	TATAGACTATCTGAGAAATGATACGGCGACCAACCGAGATC
BC22-R	ACAGTACACGAGAGCAAATGATACGGCGACCAACCGAGATC
BC23-R	CACGCGACGCTCTCTAAATGATACGGCGACCAACCGAGATC
BC24-R	GTGCTCTGTGTGTCAATGATACGGCGACCAACCGAGATC
BC01 mC5	CACATATCAGAGTGCGGGACATCACAAGCCACAACG
BC02 mC5	ACACACGCGAGACAGAGGACATCACAAGCCACAACG
BC03 mC5	ACGCGCTATCTCAGAGGGACATCACAAGCCACAACG
BC04 mC5	CACACGCGCGCTATATGGACATCACAAGCCACAACG
BC05 mC5	ACACACTCTATCAGATGGACATCACAAGCCACAACG
BC06 mC5	CTATACATAGTGATGTGGACATCACAAGCCACAACG
BC07 mC5	TATATATGTCTATAGAGGACATCACAAGCCACAACG
BC08 mC5	GAGACTAGAGATAGTGGGACATCACAAGCCACAACG
BC09 mC5	ATGTGTATATAGATATGGACATCACAAGCCACAACG
BC10 mC5	GCGCGCGCACTCTCTGGGACATCACAAGCCACAACG
BC11 mC5	GTGTGTCTCGATGCGCGGACATCACAAGCCACAACG
BC12 mC5	TGTCATATGAGAGTGTGGACATCACAAGCCACAACG
BC13 mC5	TCTCGCGCGTGACGCGGACATCACAAGCCACAACG
BC14 mC5	GATATATCGAGTATATGGACATCACAAGCCACAACG
BC15 mC5	GTGTGCACTCACACTCGGACATCACAAGCCACAACG
BC16 mC5	CGTGTCTAGCGCGCGCGGACATCACAAGCCACAACG
BC17 mC5	GTGTGAGATATATATCGGACATCACAAGCCACAACG
BC18 mC5	GCGCACGCACTACAGAGGACATCACAAGCCACAACG
BC19 mC5	CACACGAGATCTCATCGGACATCACAAGCCACAACG
BC20 mC5	AGACACACGACACATGGACATCACAAGCCACAACG
BC21 mC5	TCTCAGATAGTCTATAGGACATCACAAGCCACAACG
BC22 mC5	TGCTCTCGTGTACTGTGGACATCACAAGCCACAACG
BC23 mC5	TAGAGAGCGTCGCGTGGGACATCACAAGCCACAACG
BC24 mC5	GTGACACACAGAGCACGGACATCACAAGCCACAACG
BC25 mC5	CTCGTGACGCTGACTGGGACATCACAAGCCACAACG
BC26 mC5	CATCGTCACAGACATAGGACATCACAAGCCACAACG
BC27 mC5	GTCTATCTCGCGAGAGGGACATCACAAGCCACAACG
BC28 mC5	GATGTGTGCGCAGTGCGGACATCACAAGCCACAACG
BC29 mC5	TGAGATATGCATGATGGGACATCACAAGCCACAACG
BC30 mC5	GACACTCGCATGTGCGGGACATCACAAGCCACAACG
BC31 mC5	GTGACAGACGTCACGCGGACATCACAAGCCACAACG
BC32 mC5	ATAGAGAGTGTCTCAGGGACATCACAAGCCACAACG
BC01 NOSR	CGCACTCTGATATGTGATCGCAAGACCGGCAACAGG
BC02 NOSR	TCTGTCTCGCGTGTGTATCGCAAGACCGGCAACAGG
BC03 NOSR	CTCTGAGATAGCGCGTATCGCAAGACCGGCAACAGG
BC04 NOSR	ATATAGCGCGCGTGTGATCGCAAGACCGGCAACAGG
BC05 NOSR	ATCTGATAGAGTGTGTATCGCAAGACCGGCAACAGG
BC06 NOSR	ACATCACTATGTATAGATCGCAAGACCGGCAACAGG
BC07 NOSR	TCTATAGACATATATAATCGCAAGACCGGCAACAGG
BC08 NOSR	CACTATCTCTAGTCTCATCGCAAGACCGGCAACAGG
BC09 NOSR	ATATCTATATACACATATCGCAAGACCGGCAACAGG
BC10 NOSR	CAGAGAGTGCGCGCGCATCGCAAGACCGGCAACAGG
BC11 NOSR	GCGCATCGAGACACACATCGCAAGACCGGCAACAGG
BC12 NOSR	ACACTCTCATATGACAATCGCAAGACCGGCAACAGG
BC25 NOSR	CAGTCAGCGTCACGAGATCGCAAGACCGGCAACAGG
BC26 NOSR	TATGTCTGTGACGATGATCGCAAGACCGGCAACAGG
BC27 NOSR	CTCTCGCGAGATAGACATCGCAAGACCGGCAACAGG
BC28 NOSR	GCACTGCGCACACATCATCGCAAGACCGGCAACAGG
BC29 NOSR	CATCATGCATATCTCAATCGCAAGACCGGCAACAGG
BC30 NOSR	CGCACATGCGAGTGTATCGCAAGACCGGCAACAGG
BC31 NOSR	GCGTGACGTCTGTACATCGCAAGACCGGCAACAGG
BC32 NOSR	CTGAGACACTCTCTATATCGCAAGACCGGCAACAGG
BC33 NOSR	TCTGTGCACGCTCGCAATCGCAAGACCGGCAACAGG
BC34 NOSR	TCACGCTCTGTCTACTATCGCAAGACCGGCAACAGG
BC35 NOSR	ATATGTATGTATGCACATCGCAAGACCGGCAACAGG
BC36 NOSR	TGTCAGTGCGCGTCTGTATCGCAAGACCGGCAACAGG
BC37 NOSR	CGCATATCAGCGCAGCATCGCAAGACCGGCAACAGG
BC38 NOSR	TCATCGATCACTGCACATCGCAAGACCGGCAACAGG
BC39 NOSR	AGTGTATATCGACAGAATCGCAAGACCGGCAACAGG
BC40 NOSR	GTAGCATATATGAGTAATCGCAAGACCGGCAACAGG
BC41 NOSR	AGTATCATGTGTATCTATCGCAAGACCGGCAACAGG
BC42 NOSR	CAGAGCGCTCGCAGCAATCGCAAGACCGGCAACAGG
BC43 NOSR	TATAGCATAGAGTCACATCGCAAGACCGGCAACAGG
BC44 NOSR	GAGCGCAGATGCTGTATCGCAAGACCGGCAACAGG
BC45 NOSR	AGATATGCGCGACACGATCGCAAGACCGGCAACAGG
BC46 NOSR	ACGCGCGTATATATCAATCGCAAGACCGGCAACAGG
BC47 NOSR	TGATACAGATCAGACAATCGCAAGACCGGCAACAGG
BC48 NOSR	ACTCTATCACACACAGATCGCAAGACCGGCAACAGG
R1T-FL	ACACTCTTTCCCTACACGACGCTCTTCCGATCT
R1N-FL	TCGTGCGCAGCGTCAGATGTGTATAAGAGACAG
mC5-F	GCTGGACATCACAAGCCACA
BS21-F	TCCCACGGCGACCACTTCG

index primers for 1-kb barcode
sequence amplification from
seed samples

mixture primers for reverse
transcription post T7-IVT
outer forward primer for barcode
amplification from cDNA library
inner forward primer for barcode
amplification from cDNA library

BC01	R1T	CACATATCAGAGTGCAGACACTCTTTCCCTACACGACGCTC	index primers (reverse) for barcode amplification from cDNA library using TT strategy
BC02	R1T	ACACACGCGAGACAGAACTCTTTCCCTACACGACGCTC	
BC03	R1T	ACGCGCTATCTCAGAGACACTCTTTCCCTACACGACGCTC	
BC04	R1T	CACACGCGCGCTATATACACTCTTTCCCTACACGACGCTC	
BC05	R1T	ACACACTCTATCAGATACACTCTTTCCCTACACGACGCTC	
BC06	R1T	CTATACATAGTGATGTACACTCTTTCCCTACACGACGCTC	
BC07	R1T	TATATATGTCTATAGAACACTCTTTCCCTACACGACGCTC	
BC08	R1T	GAGACTAGAGATAGTGACACTCTTTCCCTACACGACGCTC	
BC09	R1N	ATGTGTATATAGATATTCGTCGGCAGCGTCAGATGTGTA	
BC10	R1N	GCGCGCGCACTCTCTGTCGTCGGCAGCGTCAGATGTGTA	index primers (reverse) for barcode amplification from cDNA library using TN or NN strategy
BC11	R1N	GTGTGTCTCGATGCGCTCGTCGGCAGCGTCAGATGTGTA	
BC12	R1N	TGTCATATGAGAGTGTTTCGTCGGCAGCGTCAGATGTGTA	
BC13	R1N	TCTCGCGCGTGCACGCTCGTCGGCAGCGTCAGATGTGTA	
BC14	R1N	GATATATCGAGTATATTCGTCGGCAGCGTCAGATGTGTA	
BC15	R1N	GTGTGCACTCACACTCTCGTCGGCAGCGTCAGATGTGTA	
BC16	R1N	CGTGTCTAGCGCGCGCTCGTCGGCAGCGTCAGATGTGTA	
BC17	R1N	GTGTGAGATATATATCTCGTCGGCAGCGTCAGATGTGTA	
BC18	R1N	GCGCACGCACTACAGATCGTCGGCAGCGTCAGATGTGTA	
BC19	R1N	CACACGAGATCTCATCTCGTCGGCAGCGTCAGATGTGTA	
BC20	R1N	AGACACACACGCACATTCGTCGGCAGCGTCAGATGTGTA	
BC21	R1N	TCTCAGATAGTCTATATCGTCGGCAGCGTCAGATGTGTA	
BC22	R1N	TGCTCTCGTGTACTGTTTCGTCGGCAGCGTCAGATGTGTA	
BC23	R1N	TAGAGAGCGTCGCGTGTCTCGTCGGCAGCGTCAGATGTGTA	
BC24	R1N	GTGACACACAGAGCACTCGTCGGCAGCGTCAGATGTGTA	
