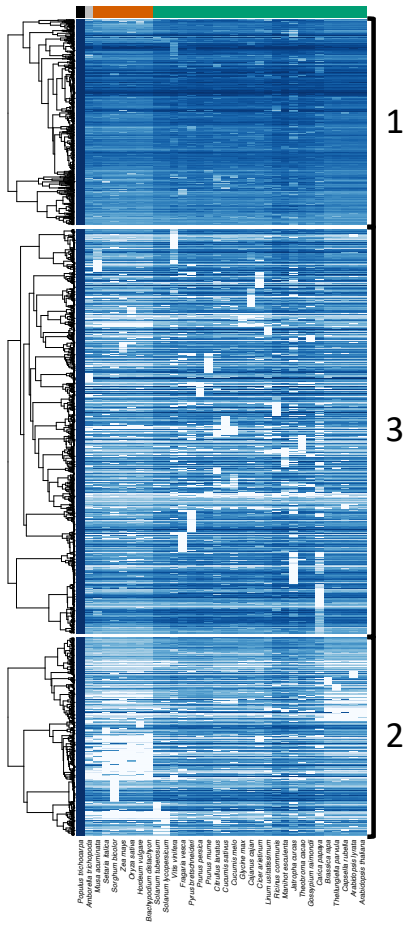


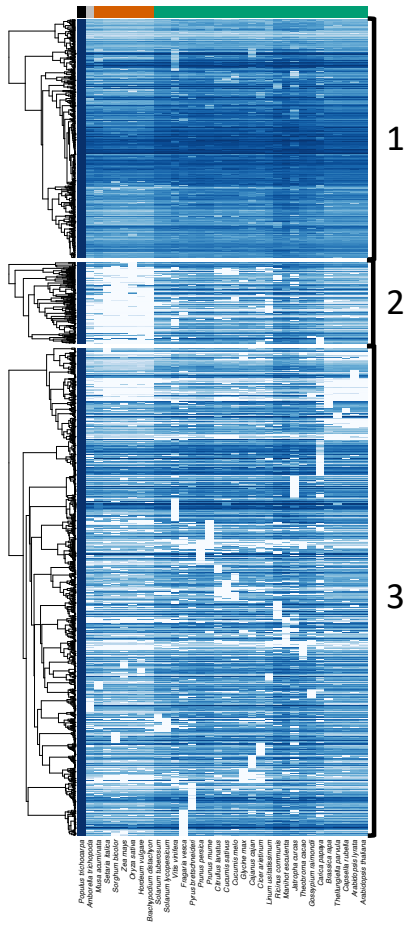
GO category	GO description	Enrichment
BIOLOGICAL_PROCESS	1,2-dichloroethane catabolic process	● -
	abscisic acid-activated signaling pathway	● -
	amino acid transmembrane transport	● -
	anther dehiscence	● -
	arabinan catabolic process	● -
	aromatic amino acid family metabolic process	● ●
	aspartate family amino acid metabolic process	● ●
	auxin efflux	● ●
	auxin polar transport	● ●
	auxin transport	● -
	callose deposition in cell wall	● -
	carbohydrate derivative catabolic process	● ●
	carboxylic acid catabolic process	● ●
	carboxylic acid transport	● ●
	cell morphogenesis	● ●
	cell morphogenesis involved in differentiation	● -
	cell proliferation	● -
	cellular amino acid biosynthetic process	● -
	cellular biogenic amine metabolic process	● -
	cellular metal ion homeostasis	● -
	cellular response to acid chemical	● ●
	cellular response to oxygen-containing compound	● ●
	cellular response to phosphate starvation	● -
	cellular response to starvation	● ●
	cellulose biosynthetic process	● ●
	cellulose microfibril organization	● -
	chemical homeostasis	● ●
	coenzyme biosynthetic process	● -
	cotyledon vascular tissue pattern formation	● -
	cytoskeleton organization	● -
	defense response to bacterium	● ●
	defense response to bacterium, incompatible interaction	● -
	developmental cell growth	● -
	divalent metal ion transport	● -
	DNA replication	● ●
	embryonic morphogenesis	● -
	ethylene biosynthetic process	● -
	fatty acid biosynthetic process	● ●
	fatty acid metabolic process	● ●
	floral whorl development	● ●
	fruit dehiscence	● -
	galactose metabolic process	● ●
	gametophyte development	● -
	generation of precursor metabolites and energy	● -
	glycerolipid metabolic process	● -
	glycogen metabolic process	● -
	glycosaminoglycan catabolic process	● -
	glycosyl compound biosynthetic process	● ●
	glycosyl compound metabolic process	● -
	hemicellulose metabolic process	● -
	histidine metabolic process	● ●
	homogalacturonan biosynthetic process	● -
	hormone-mediated signaling pathway	● ●
	hydrogen ion transmembrane transport	● ●
	import across plasma membrane	● -
	indole-containing compound metabolic process	● -
	induced systemic resistance, jasmonic acid mediated signaling pathway	● -
	intracellular signal transduction	● ●
	isoleucine catabolic process	● -
	jasmonic acid and ethylene-dependent systemic resistance	● -
	leaf development	● ●
	leucine catabolic process	● -
	lignin biosynthetic process	● -
	lignin catabolic process	● ●
	limonene catabolic process	● -
	lipid biosynthetic process	● ●
	microtubule-based process	● ●
	mitochondrial fission	● ●
	monocarboxylic acid biosynthetic process	● ●
	mRNA processing	● -
	negative regulation of ethylene-activated signaling pathway	● -
	negative regulation of seed germination	● -
	nitrogen compound transport	● ●
	nucleobase metabolic process	● -
	nucleotide-sugar biosynthetic process	● ●
	one-carbon metabolic process	● -
	peptidyl-histidine phosphorylation	● -
	peptidyl-serine phosphorylation	● ●
	pigment catabolic process	● -
	plant organ formation	● -
	plant-type primary cell wall biogenesis	● ●
	plant-type secondary cell wall biogenesis	● ●
	polarity specification of adaxial/abaxial axis	● -
	pollen development	● ●
	pollination	● -
	porphyrin-containing compound catabolic process	● ●
	positive gravitropism	● ●
	positive regulation of developmental process	● -
	positive regulation of reproductive process	● -
	post-embryonic plant morphogenesis	● -
	potassium ion transmembrane transport	● ●
	primary shoot apical meristem specification	● -
	protein autophosphorylation	● ●
	protein catabolic process	● ●
	purine nucleoside metabolic process	● -
	purine ribonucleotide biosynthetic process	● ●
	purine ribonucleotide metabolic process	● -
	regulation of root development	● ●
	regulation of seed maturation	● -

GO category	GO description	Enrichment
	regulation of stomatal movement	- .
	response to cadmium ion	● .
	response to cold	- .
	response to fungus	● .
	response to heat	● .
	response to hydrogen peroxide	- .
	response to light stimulus	- .
	response to lipid	- .
	response to organic cyclic compound	- .
	response to red or far red light	- .
	response to salt stress	● .
	response to sucrose	- .
	response to water deprivation	● .
	response to wounding	- .
	ribonucleoside metabolic process	- .
	ribonucleoside monophosphate metabolic process	- .
	ribonucleoside triphosphate metabolic process	- .
	root hair cell differentiation	- .
	root hair elongation	- .
	S-adenosylmethionine biosynthetic process	● .
	serine family amino acid metabolic process	● .
	starch metabolic process	● .
	sterol biosynthetic process	- .
	sucrose metabolic process	● .
	sugar mediated signaling pathway	- .
	sulfur compound metabolic process	- .
	trehalose metabolism in response to stress	- .
	UDP-glucose metabolic process	● .
	unidimensional cell growth	● .
	vacuolar acidification	- .
	vacuolar protein processing	● .
	valine catabolic process	- .
	xylem and phloem pattern formation	● .
CELLULAR_COMPONENT	apoplast	● .
	cellulose synthase complex	- .
	chloroplast part	- .
	cytosol	● .
	endocytic vesicle	- .
	endomembrane system	- .
	Golgi membrane	- .
	integral component of plasma membrane	● .
	kinesin complex	- .
	microtubule	- .
	nucleolus	● .
	plant-type cell wall	- .
	plant-type vacuole	- .
	plasma membrane part	- .
	plasmodesma	● .
	protein histidine kinase complex	- .
	protein phosphatase type 1 complex	- .
	tubulin complex	● .
	vacuolar membrane	- .
	vacuolar proton-transporting V-type ATPase, V0 domain	- .
MOLECULAR_FUNCTION	alpha,alpha-trehalose-phosphate synthase (UDP-forming) activity	● .
	amino acid transmembrane transporter activity	- .
	ATP binding	● .
	ATPase activity, coupled to transmembrane movement of ions, phosphorylative mechanism	● .
	ATPase coupled ion transmembrane transporter activity	- .
	auxin efflux transmembrane transporter activity	- .
	auxin influx transmembrane transporter activity	- .
	calcium ion binding	● .
	calcium-dependent protein serine/threonine kinase activity	● .
	calmodulin binding	- .
	calmodulin-dependent protein kinase activity	● .
	cation-transporting ATPase activity	- .
	cellulose synthase (UDP-forming) activity	● .
	copper ion binding	● .
	ethylene binding	- .
	ethylene receptor activity	● .
	FAD binding	- .
	glucuronoxylan glucuronosyltransferase activity	- .
	GTP binding	- .
	GTPase activity	- .
	hydrolase activity, hydrolyzing O-glycosyl compounds	● .
	hydroquinone: oxygen oxidoreductase activity	● .
	ligase activity, forming carbon-sulfur bonds	- .
	metal ion transmembrane transporter activity	- .
	methionine adenosyltransferase activity	● .
	microtubule binding	- .
	monovalent inorganic cation transmembrane transporter activity	- .
	N-acylphosphatidylethanolamine-specific phospholipase D activity	- .
	NAD binding	- .
	oligopeptide transmembrane transporter activity	- .
	oxidoreductase activity, acting on paired donors, with incorporation or reduction of molecular oxygen...	● .
	oxidoreductase activity, acting on the aldehyde or oxo group of donors, NAD or NADP as acceptor	● .
	oxidoreductase activity, oxidizing metal ions	● .
	oxygen binding	- .
	phospholipase D activity	- .
	phosphorelay sensor kinase activity	- .
	potassium channel activity	- .
	RNA polymerase II regulatory region sequence-specific DNA binding	- .
	secondary active transmembrane transporter activity	- .
	structural constituent of cytoskeleton	● .
	symporter activity	- .
	transferase activity, transferring hexosyl groups	- .
	transmembrane receptor activity	- .
	trehalose-phosphatase activity	- .
	UDP-galactosyltransferase activity	- .
	UDP-glycosyltransferase activity	- .
	UTP-glucose-1-phosphate uridylyltransferase activity	- .

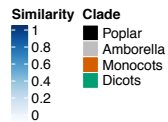
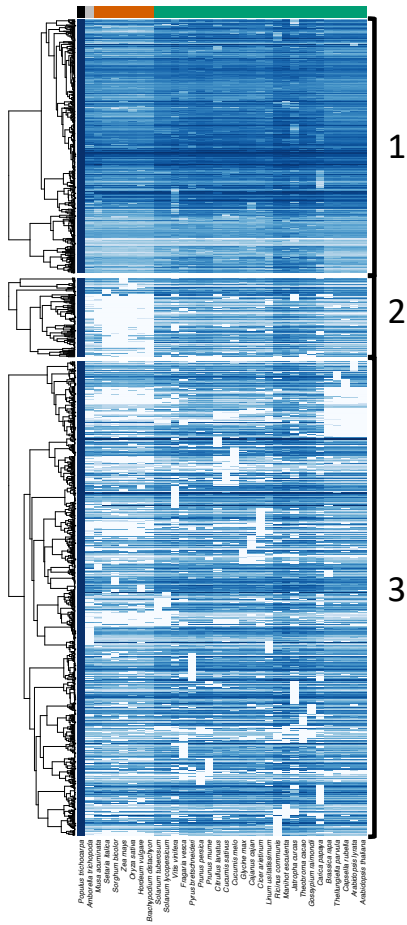
Cluster H



Cluster E1







Cluster E2



GO Category	GO Description		
Biological process	single-organism carbohydrate metabolism	◆	
	cell surface receptor signaling pathway	◆	
	plant organ development	◆	
	protein phosphorylation	◆	
	ion transmembrane transport	◆	
	organic substance catabolism	◆	
	cell wall organization	◆	
	nucleotide-sugar metabolism	◆	
	organic substance metabolism	◆	
	carbohydrate derivative metabolism	◆	
	stomatal movement	◆	
	single-organism process	◆	
	single organism reproductive process	◆	
	signaling	◆	
	response to stimulus	◆	
	reproduction	◆	
	nitrogen compound metabolism	◆	
	multicellular organismal process	◆	
	metabolism	◆	
	localization	◆	
	growth	◆	
	generation of precursor metabolites and energy	◆	
	developmental process	◆	
	cofactor metabolism	◆	
	coenzyme metabolism	◆	
	cellular process	◆	
	cellular component organization or biogenesis	◆	
	cell wall organization or biogenesis	◆	
	cell communication	◆	
	catabolism	◆	
	carbohydrate metabolism	◆	
	Cellular component	cytosol	◆
		external encapsulating structure	◆
		bounding membrane of organelle	◆
		membrane part	◆
		endomembrane system	◆
		catalytic complex	◆
		whole membrane	◆
		symplast	◆
		side of membrane	◆
		pollen tube	◆
		membrane	◆
		extracellular region	◆
cell-cell junction		◆	
cell junction		◆	
cell		◆	
apoplast		◆	
Molecular function		phosphotransferase activity, alcohol group as acceptor	◆
		magnesium ion binding	◆
		protein binding	◆
		hydrolase activity, hydrolyzing O-glycosyl compounds	◆
	ion transmembrane transporter activity	◆	
	signaling receptor activity	◆	
	oxidoreductase activity, oxidizing metal ions	◆	
	ligase activity, forming carbon-sulfur bonds	◆	
	carbon-oxygen lyase activity, acting on polysaccharides	◆	
	transporter activity	◆	
	transferase activity	◆	
	structural constituent of cytoskeleton	◆	
	signal transducer activity	◆	
	oxidoreductase activity	◆	
	molecular transducer activity	◆	
	lyase activity	◆	
	lipid binding	◆	
	hydrolase activity	◆	
	coenzyme binding	◆	
	catalytic activity	◆	
	binding	◆	

GO Category	GO Description	
Biological process	regulation of gene expression	◆
	regulation of macromolecule metabolic process	◆
	regulation of cellular macromolecule biosynthetic process	◆
	regulation of macromolecule biosynthetic process	◆
	regulation of primary metabolic process	◆
	regulation of nitrogen compound metabolic process	◆
	transcription, DNA-templated	◆
	regulation of cellular metabolic process	◆
	regulation of transcription, DNA-templated	◆
	regulation of cellular biosynthetic process	◆
	RNA biosynthetic process	◆
	nucleic acid-templated transcription	◆
	regulation of RNA biosynthetic process	◆
	regulation of nucleic acid-templated transcription	◆
	regulation of biosynthetic process	◆
	regulation of metabolic process	◆
	regulation of RNA metabolic process	◆
	regulation of nucleobase-containing compound metabolic process	·
	nucleic acid metabolic process	·
	Cellular component	transcription factor complex
Molecular function	transcription factor activity, sequence-specific DNA binding	·
	nucleic acid binding transcription factor activity	·

 Tier 3	SND1	NST1	NST2	VND6	VND7		
 Tier 2	SND3	MYB46	MYB61	MYB83	MYB103		
 Tier 1		MYB4	SND2	KNAT7	MYB20		
		MYB7	MYB52	MYB75	MYB58		
		MYB32	MYB54		MYB63		
			C3H14		MYB69		
					MYB79		
					MYB85		
					ATHB18		
					At3g46080		
	 Structural genes	Cellulose:	Hemicellulose:	Programmed cell death:	Signalling:	Lignin:	Other:
		CesA4	FRA8	XCP1	ROP1/2/4	PAL1	FLA11
CesA7		IRX8	XCP2	CTL2	PAL4	FLA12	
CesA8		IRX9	MC8	LRR kinases	C4H	FLA13	
COBL4		IRX9-L	MC9	Rac GTPase	4CL1	FLA15	
		IRX10	RNS3	Rho GTPase	4CL3	AGP4	
		IRX14	BFN1	IQD10	HCT	AGP21	
		IRX14-L		RIC2	C3H1	Xyn3	
		IRX15			CCoAOMT1	RIP4	
		IRX15-L			CCR1	ARAC2	
		CsIA9			F5H1	BGAL3	
		CsIB1/2			COMT	TBL3	
		GXM1/2/3			CAD4/6	GLP10	
		GUX1/2			CHS	CCoAOMT7	
		PGSIP1			LAC4		
		PGSIP3			LAC10		
		UXS3			LAC17		
		PME					
		XTH10					
		PARVUS					