

Table S5. EMB genes in the co-expression network

Module	Gene identifier	Gene Symbol	Predicted protein function	Additional comments on protein function
Black	AT5G14850	<i>APTG1</i>	Mannosyltransferase	ER-localized; Biosynthesis of GPI anchors
Black	AT5G59340	<i>WOX2</i>	Homeodomain Protein	Transcriptional regulator
Black	AT5G51020	<i>CRL</i>	Plastid Outer Envelope Membrane Protein	Required for plastid division
Black	AT3G48930	<i>EMB1080</i>	Ribosomal Protein S11	Translation in cytosol
Black	AT4G23940	<i>FtsH1</i>	Chloroplast AAA-ATPase; YcI2-FtsHi Complex Subunit	Required for chloroplast protein import
Black	AT4G12130	<i>COG0354</i>	Mitochondrial Fe-S Cluster Biogenesis Protein	Folate dependent
Black	AT3G04400	<i>EMB2171</i>	Ribosomal Protein L17/L23	Translation in mitochondria or cytosol
Black	AT1G49880	<i>EMB3106</i>	Mitochondrial Sulfhydryl Oxidase	Proposed to stabilize mitochondrial proteins by oxidative protein folding
Black	AT1G02780	<i>EMB2386</i>	Ribosomal Protein L19	Translation in cytosol
Black	AT1G78580	<i>TPS1</i>	Trehalose-6-Phosphate Synthase 1	Catalyzes first step in trehalose biosynthesis
Black	AT2G03870	<i>EMB2816</i>	Pre-mRNA Splicing Factor	RNA processing and decay
Black	AT2G18020	<i>EMB2296</i>	Ribosomal Protein L8/L2	Translation in mitochondria or cytosol
Black	AT2G34480	<i>RPL18aB</i>	Ribosomal Protein	Translation in cytosol
Blue	AT2G39770	<i>CYT1</i>	Mannose-1-Phosphate-Guanyltransferase; GDP-MannosePyrophosphorylase	GDP-mannose production; N-glycosylation; Vitamin C biosynthesis
Blue	AT2G47620	<i>SWI3A</i>	Subunit of SWI/SNF Chromatin Remodeling Complex	ATP-dependent chromatin remodeling; Transcriptional regulation
Blue	AT4G14590	<i>EMB2739</i>	snRNA Processing Factor	snRNA 3' end maturation; Pre-mRNA splicing
Blue	AT5G19820	<i>EMB2734</i>	Karyopherin (Importin) Protein	Import of proteins into nucleus; miRNA biogenesis
Blue	AT5G20920	<i>EMB1401</i>	Translation Initiation Factor	Attachment of ribosome small subunit in translation
Blue	AT4G36480	<i>EMB2779</i>	Serine Palmitoyltransferase Subunit	Catalyzes first step in sphingolipid biosynthesis
Blue	AT4G36630	<i>EMB2754</i>	Putative Vacuolar Protein (VPS39)	Proposed role in vacuolar protein sorting
Blue	AT1G31860	<i>HISN2</i>	Histidine Biosynthetic Enzyme	Catalyzes second step in histidine biosynthesis
Blue	AT5G16750	<i>TOZ</i>	Uncertain	Nucleolar WD-40 repeat protein; Possible role in 18S rRNA biogenesis
Blue	AT5G27740	<i>EMB2775</i>	DNA Replication Factor C Subunit	DNA replication; PCNA clamp loading
Blue	AT5G27540	<i>EMB2473</i>	Mitochondrial GTPase	Regulation of mitochondrial trafficking and morphology
Blue	AT5G26760	<i>RIMA</i>	Putative Role in Nuclear Import and Transcriptional Regulation	Interacts with IYO transcriptional regulator
Blue	AT5G67570	<i>EMB1408</i>	PPR Protein	RNA binding protein; Organellar gene function
Blue	AT5G66055	<i>EMB2036</i>	Uncertain	Chloroplast-localized ankyrin repeat protein
Blue	AT5G63420	<i>EMB2746</i>	Chloroplast Ribonuclease J	Chloroplast RNA metabolism
Blue	AT5G62990	<i>EMB1692</i>	PORR Domain Protein	Putative role in organellar RNA splicing or metabolism
Blue	AT5G60540	<i>EMB2407</i>	Pyridoxine Glutaminase	Pyroxidine (vitamin B6) biosynthesis
Blue	AT5G59440	<i>ZEUS1</i>	Thymidylate Kinase	Biosynthesis of dTDP; Regulation of replication
Blue	AT5G58230	<i>MSI1</i>	Polycomb Repressive Complex Subunit	Chromatin modification; Histone methylation
Blue	AT5G58020	<i>RTF2</i>	Replication Termination Factor Domain Protein	Pre-mRNA splicing
Blue	AT5G55940	<i>EMB2731</i>	Unknown	None
Blue	AT5G53400	<i>BOB1</i>	Non-Canonical Small Heat Shock Protein	Putative molecular chaperone
Blue	AT5G49720	<i>KOR</i>	Endo-B-1,4-Glucanase; Glycosyl Hydrolase	Cellulose biosynthesis
Blue	AT5G49010	<i>EMB2812</i>	GIN5 Complex Subunit	DNA replication
Blue	AT5G48720	<i>XRI1</i>	Novel DNA Repair Factor	Functions in meiosis; male gametophyte development
Blue	AT5G48840	<i>PTS</i>	Pantothenate Synthetase	Vitamin B5 biosynthesis; Coenzyme A function
Blue	AT5G42080	<i>ADL1A</i>	Dynamin-Like Protein	Associated with cell plate; Similar to phragmoplastin; Proposed role in vesicular trafficking and cytokinesis
Blue	AT5G37510	<i>EMB1467</i>	Mitochondrial NADH Dehydrogenase Complex Subunit	Role in electron transport chain
Blue	AT5G23880	<i>EMB1265</i>	Cleavage and Polyadenylation Specificity Factor	Location of poly(A) sites; Modulation of transcription termination
Blue	AT5G18580	<i>FASS</i>	Protein Phosphatase (PP2A Complex Subunit)	Preprophase band formation; Orientation of cell division
Blue	AT5G17710	<i>EMB1241</i>	Chloroplast GrpE Protein	Interacts with Hsp70; Chloroplast protein maintenance
Blue	AT5G13780	<i>NAA10</i>	N-Terminal Acetyltransferase, Catalytic Subunit	Protein modification
Blue	AT5G13010	<i>EMB3011</i>	RNA Helicase	Pre-mRNA splicing factor; miRNA biogenesis
Blue	AT5G11890	<i>EMB3135</i>	Unknown	None
Blue	AT5G09900	<i>EMB2107</i>	26S Proteasome Regulatory Subunit	Component of 26S proteasome lid
Blue	AT5G06240	<i>EMB2735</i>	Unknown	None
Blue	AT5G05680	<i>EMB2789</i>	Nuclear Envelope Protein (Nup88)	Nuclear protein export; Spindle apparatus function
Blue	AT5G02190	<i>ASP38</i>	Aspartic Protease	ER-localized protein
Blue	AT5G02250	<i>EMB2730</i>	Ribonuclease II Family Protein	3' to 5' Exoribonuclease; Maturation of chloroplast RNAs
Blue	AT3G60740	<i>TTN1</i>	Tubulin Folding Cofactor D	Regulation of B-tubulin folding and microtubule dynamics
Blue	AT3G55010	<i>EMB2818</i>	Phosphoribosylformylglycinamide Cyclo-Ligase (PUR5)	AIR synthetase; Purine biosynthesis
Blue	AT3G54650	<i>FBL17</i>	F-Box Protein	Cell cycle regulation in male gametophyte development
Blue	AT3G50870	<i>HAN</i>	GATA Factor Transcriptional Regulator	Regulation of transcription
Blue	AT3G49240	<i>EMB1796</i>	PPR Protein	Editing of mitochondrial and chloroplast transcripts; Interacts with DYW2
Blue	AT3G48750	<i>CDC2A</i>	A-Type Cyclin-Dependent Kinase	Cell cycle control
Blue	AT4G38440	<i>IYO</i>	Transcriptional Regulator	RNA polymerase II interacting factor
Blue	AT4G33090	<i>APM1</i>	M1 Aminopeptidase	Proposed role in auxin transport
Blue	AT4G32720	<i>LA1</i>	RNA Binding Protein	RNA maturation and stability in nucleus
Blue	AT4G32410	<i>RSW1</i>	Cellulose Synthase	Cellulose biosynthesis; Primary cell wall formation
Blue	AT4G32400	<i>EMB104</i>	Transmembrane Nucleotide Transporter	Protein localized to plastids and mitochondria

Blue	AT4G31810	<i>CHY4</i>	3-Hydroxyisobutyryl-CoA Hydrolase	Valine degradation in mitochondria
Blue	AT4G27010	<i>EMB2788</i>	Uncertain	Possible role in ribosome biogenesis
Blue	AT4G26500	<i>EMB1374</i>	Fe-S Cluster Assembly Factor	Activator of Plastidic and Mitochondrial Desulfurases
Blue	AT4G23660	<i>PPT1</i>	4-Hydroxybenzoate Polyprenyl Diphosphate Transferase	Ubiquinone Biosynthesis
Blue	AT4G21710	<i>EMB1989</i>	RNA Polymerase II Subunit	Transcription
Blue	AT4G20740	<i>EMB3131</i>	PPR Protein	RNA binding protein; Organellar gene function
Blue	AT4G10760	<i>EMB1706</i>	m6A Methyltransferase Complex Subunit	N6-adenosine methylation of mRNA; mRNA modification, splicing, metabolism
Blue	AT4G09980	<i>EMB1691</i>	m6A Methyltransferase Complex Subunit	N6-adenosine methylation of mRNA; mRNA modification, splicing, metabolism
Blue	AT4G07410	<i>PCN</i>	WD-40 Repeat Protein	Proposed role in auxin signaling
Blue	AT4G02570	<i>AXR6</i>	Cullin 1 Protein; SCF Ubiquitin Ligase Complex Subunit	Protein degradation; Auxin response pathways
Blue	AT4G02060	<i>PRL</i>	DNA Replication Licensing Factor	Initiation of replication
Blue	AT4G00231	<i>ZIX</i>	Unknown	Armadillo Repeat Protein
Blue	AT1G56200	<i>EMB1303</i>	Unknown	Chloroplast-localized protein
Blue	AT3G20630	<i>TTN6</i>	Deubiquitinating Enzyme	Ubiquitin processing and recycling; Negative regulator of endoreduplication
Blue	AT3G13200	<i>EMB2769</i>	U5 Associated Protein	Proposed role in pre-mRNA splicing
Blue	AT1G24340	<i>EMB2421</i>	Polyketide Hydroxylase-Related Monooxygenase	None
Blue	AT3G20440	<i>EMB2729</i>	1,4-Alpha-Glucan Branching Enzyme	Similar to starch branching enzyme
Blue	AT3G19770	<i>VPS9A</i>	Guanine Exchange Factor	Regulator of Rab5 GTPase; Membrane trafficking
Blue	AT3G17910	<i>EMB3121</i>	Cytochrome C Oxidase Assembly (Surf1)	Mitochondrial electron transport
Blue	AT3G27670	<i>RST1</i>	Uncertain	Plasma membrane protein; Cuticular wax formation
Blue	AT3G04680	<i>CLPS3</i>	Polyadenylation Factor	mRNA 3' end processing
Blue	AT3G10670	<i>NAP7</i>	Plastidic SufC-Like ABC/ATPase	Fe-S cluster maintenance and repair
Blue	AT3G08950	<i>HCC1</i>	Cytochrome C Oxidase Assembly Factor	Homolog of yeast copper chaperone
Blue	AT3G10220	<i>EMB2804</i>	Tubulin Folding Cofactor B	Regulation of B-tubulin folding and microtubule dynamics
Blue	AT3G01610	<i>EMB1354</i>	AAA ATPase	Putative cell division control protein; Possible role in protein unfolding
Blue	AT1G63160	<i>EMB2811</i>	DNA Replication Factor C Subunit	DNA replication; PCNA clamp loading
Blue	AT1G77470	<i>EMB2810</i>	DNA Replication Factor C Subunit	DNA replication; PCNA clamp loading; Chromatin assembly
Blue	AT1G67630	<i>EMB2814</i>	DNA Polymerase Alpha; Beta Subunit	Initiation of DNA replication
Blue	AT1G80410	<i>EMB2753</i>	N-Terminal Acetyltransferase	Protein modification
Blue	AT1G51450	<i>TRAUCO</i>	Trithorax Class Transcriptional Regulator; H3K4 Methyltransferase Complex Component	Regulation of transcription; Histone modification
Blue	AT1G55870	<i>PARN</i>	Poly(A) Ribonuclease	Regulation of poly(A) status of mitochondrial mRNA
Blue	AT1G62360	<i>STM</i>	Knotted Class Homeodomain Protein	Transcriptional regulation; Shoot meristem formation
Blue	AT1G07910	<i>ZYG3</i>	tRNA Ligase	tRNA splicing in cytosol
Blue	AT1G34550	<i>EMB2756</i>	Unknown	None
Blue	AT1G71820	<i>SEC6</i>	Subunit of Exocyst Complex	Tethering of secretory vesicles to plasma membrane
Blue	AT1G08260	<i>EMB2284</i>	Subunit of DNA Polymerase Epsilon	DNA replication and repair; Cell cycle control
Blue	AT1G49400	<i>EMB1129</i>	Ribosomal Protein S17	Translation in cytosol
Blue	AT1G21690	<i>EMB1968</i>	Replication Factor C Subunit	DNA replication; PCNA clamp loading
Blue	AT1G15220	<i>CCMH</i>	Mitochondrial Thiol-Disulfide Oxidoreductase	Mitochondrial cytochrome C maturation
Blue	AT1G13980	<i>EMB30</i>	ARF Guanine Exchange Factor	Large membrane-associated ARF GEF; Role in vesicle trafficking and cell polarity
Blue	AT1G76060	<i>EMB1793</i>	Uncertain	Complex 1 LYR motif protein
Blue	AT1G79490	<i>EMB2217</i>	PPR Protein	RNA binding protein; Organellar gene function
Blue	AT2G17510	<i>EMB2763</i>	3' to 5' Exoribonuclease	Exosome component; Proposed role in ribosomal RNA processing
Blue	AT1G05600	<i>EMB3101</i>	PPR Protein	RNA binding protein; Organellar gene function
Blue	AT2G17250	<i>EMB2762</i>	Ribosome Biogenesis Factor	Nucleolar protein; Proposed role in rRNA processing
Blue	AT2G16440	<i>MCM4</i>	Minichromosome Maintenance Complex Subunit	DNA replication machinery
Blue	AT2G21470	<i>EMB2764</i>	SUMO Activating Enzyme	Protein modification
Blue	AT1G60170	<i>EMB1220</i>	Splicing Factor	Pre-mRNA processing; Transcriptional gene silencing
Blue	AT1G03360	<i>RRP4</i>	Exosome Subunit; Exonuclease	rRNA processing; RNA metabolism
Blue	AT1G10270	<i>GRP23</i>	Novel PPR Protein	Putative transcriptional regulator; Interacts with RNA polymerase II
Blue	AT2G18390	<i>TTN5</i>	ARL2 GTPase	Regulation of B-tubulin folding and microtubule dynamics
Blue	AT2G20000	<i>HBT</i>	Anaphase Promoting Complex Subunit	Protein degradation; Cell cycle control
Blue	AT2G01350	<i>QPT</i>	Quinolate Phosphoribosyl Transferase	NAD biosynthesis from aspartate in plastids
Blue	AT2G01420	<i>PIN4</i>	Transmembrane Auxin Efflux Carrier	Maintenance of embryonic auxin gradients
Blue	AT2G38770	<i>EMB2765</i>	RNA Helicase	Pre-mRNA splicing; miRNA biogenesis
Blue	AT2G31060	<i>EMB2785</i>	E2Fa Transcriptional Activator	Cell proliferation; Cell cycle control
Blue	AT2G26060	<i>EMB1345</i>	Cytosolic Fe-S Cluster Assembly Factor	WD-40 repeat protein
Blue	AT2G07690	<i>MCM5</i>	Minichromosome Maintenance Complex Subunit	DNA replication machinery
Blue	AT2G34260	<i>WDR55</i>	WD Repeat Protein	Substrate recruitment for ubiquitin E3 ligase complexes
Blue	AT2G38280	<i>FAC1</i>	AMP Deaminase	Purine biosynthesis; Outer mitochondrial membrane protein
Blue	AT2G41500	<i>EMB2776</i>	Pre-mRNA Splicing Factor	Proposed role in pre-mRNA splicing
Blue	AT2G35030	<i>COD1</i>	Mitochondrial PPR Protein	Editing of cytochrome C oxidase, NADH dehydrogenase transcripts associated with respiratory complex
Blue	AT2G26350	<i>PEX10</i>	Peroxisomal Membrane Protein; Ubiquitin-Protein Ligase	Import of matrix proteins into peroxisomes
Brown	AT4G16370	<i>OPT3</i>	Plasma Membrane Iron Transporter	Iron homeostasis
Brown	AT4G16440	<i>NAR1</i>	Cytosolic Fe-S Cluster Assembly Component	None

Brown	AT5G13480	<i>FY</i>	mRNA Polyadenylation Factor	3' End processing of specific mRNAs
Brown	AT5G15920	<i>EMB2782</i>	SMC5/6 Complex Subunit	Sister chromatid cohesion; Homologous recombination between sister chromatids; Double-strand break repair
Brown	AT5G66680	<i>DGL1</i>	Oligosaccharyltransferase (OST) Complex Subunit	Proposed role in N-linked glycosylation of proteins
Brown	AT5G63290	<i>HEMN1</i>	Coproporphyrinogen III Oxidase; Mitochondrial Localized	Tetrapyrrole biosynthesis
Brown	AT5G56290	<i>EMB2790</i>	Peroxisome Targeting Protein	Receptor for peroxisomal protein import
Brown	AT5G55490	<i>GEX1</i>	Plasma Membrane Protein	Proposed role in signaling pathway in gametophyte and early embryo
Brown	AT5G54800	<i>GPT1</i>	Plastidial Glucose-6-Phosphate/Phosphate Antiporter	Metabolite import into plastids
Brown	AT5G50960	<i>NBP35</i>	Cytosolic Fe-S Cluster Assembly Factor	Interacts with DRE2 protein
Brown	AT5G46280	<i>MCM3</i>	Minichromosome Maintenance Complex Subunit	DNA replication machinery
Brown	AT5G42390	<i>SPP</i>	Stromal Processing Peptidase	Cleavage of chloroplast transit peptide upon protein import from cytosol
Brown	AT5G41480	<i>GLA1</i>	Dihydrofolate Synthetase	Folate biosynthesis
Brown	AT5G40160	<i>EMB506</i>	Uncertain	Ankyrin repeat protein; Plastid differentiation
Brown	AT5G37630	<i>EMB2656</i>	Chromosome Condensation Factor	Similar to condensin subunit (CAP-G)
Brown	AT5G18820	<i>EMB3007</i>	Chloroplast Chaperonin	Folding of specific chloroplast proteins
Brown	AT5G08470	<i>EMB2817</i>	AAA ATPase	Peroxisome biogenesis
Brown	AT3G60830	<i>ARP7</i>	Actin-Related, Nuclear-Localized Protein	Proposed role in chromatin remodeling
Brown	AT3G55620	<i>EMB1624</i>	Translation Initiation Factor	Regulation of translation and 80S ribosome assembly
Brown	AT3G46560	<i>EMB2474</i>	Mitochondrial Inner Membrane Protein	Mitochondrial protein import
Brown	AT4G29660	<i>EMB2752</i>	Unknown	None
Brown	AT4G26300	<i>EMB1027</i>	Arginine tRNA Synthetase	Translation in chloroplasts
Brown	AT4G24270	<i>EMB140</i>	Uncertain	RNA recognition motif protein; Possible role in pre-mRNA processing and modification
Brown	AT4G22970	<i>AESP</i>	Separase; Kinesin Activating Protein	Separation of sister chromatids; Regulation of microtubule dynamics
Brown	AT4G21800	<i>QOT2</i>	ATP/GTP Binding Protein	Proposed role in microtubule localization
Brown	AT4G21300	<i>AtDEK36</i>	PPR Protein	RNA editing in mitochondria
Brown	AT4G13750	<i>EMB2597</i>	Uncertain	Plant-specific nuclear protein; Proposed role in auxin response
Brown	AT4G11150	<i>EMB2448</i>	Vacuolar H+ ATPase	Vacuolar proton pump component; Required for Golgi organization and secretory pathways
Brown	AT4G03240	<i>FH</i>	Frataxin	Mitochondrial and Chloroplast Fe-S cluster metabolism
Brown	AT4G02990	<i>BSM</i>	Uncertain	Plastid-localized mTERF protein; Plastid gene expression
Brown	AT3G18290	<i>EMB2454</i>	E3 Ubiquitin Ligase	Iron response mediator; Interacts with transcriptional regulators
Brown	AT3G16810	<i>APUM24</i>	Nucleolar Pumilio Class RNA Binding Protein	Pre-rRNA processing
Brown	AT3G13930	<i>MTE2-2</i>	Mitochondrial Pyruvate Dehydrogenase Subunit	Basic metabolism; Entry into citric acid cycle
Brown	AT3G15660	<i>GRXS15</i>	Mitochondrial Glutaredoxin S15	Fe-S protein maturation
Brown	AT3G17300	<i>EMB2786</i>	Uncertain	Putative Complex I (LYR domain) protein; Possible role in Fe-S cluster assembly; Mitochondrial electron transport
Brown	AT3G04460	<i>PEX12</i>	Peroxisomal Ubiquitin-Protein Ligase	Required for peroxisome biogenesis
Brown	AT3G08800	<i>SLEL1</i>	Subunit of snRNA 3' End Maturation Complex	Required for endosome localization of SHORT ROOT transcription factor
Brown	AT3G07430	<i>EMB1990</i>	Uncertain	Integral membrane, chloroplast division protein; Functions in distribution of nucleoids in chloroplasts
Brown	AT3G07630	<i>ADT2</i>	Arogenate Dehydrogenase; Prephenate Dehydratase	Phenylalanine biosynthesis; Bifunctional enzyme
Brown	AT1G73590	<i>PIN1</i>	Auxin Efflux Carrier	Maintenance of embryonic auxin gradients
Brown	AT1G55900	<i>EMB1860</i>	Inner Mitochondrial Membrane Protein	Import of mitochondrial matrix proteins
Brown	AT1G20200	<i>EMB2719</i>	26S Proteasome Regulatory Subunit	Component of 26S proteasome; Protein degradation
Brown	AT1G44900	<i>MCM2</i>	DNA Helicase; Minichromosome Maintenance Complex Subunit	DNA replication machinery
Brown	AT1G79810	<i>PEX2</i>	Peroxisomal Membrane Protein; Ubiquitin-Protein Ligase	Import of matrix proteins into peroxisomes
Brown	AT1G80070	<i>SUS2</i>	PRP8 Splicing Factor	Pre-mRNA processing factor; Spliceosome component
Brown	AT1G21650	<i>SECA2</i>	Chloroplast Inner Envelope Translocase	Chloroplast protein import
Brown	AT1G13120	<i>GLE1</i>	Nucleoporin; Nuclear Pore Complex Subunit	RNA transport from nucleus to cytosol
Brown	AT2G04030	<i>EMB1956</i>	Heat Shock Protein	Chloroplast-localized molecular chaperone; Proposed role in chloroplast protein import and thylakoid membrane maintenance
Brown	AT1G59990	<i>EMB3108</i>	DEAD Box RNA Helicase	Proposed role in chloroplast ribosome biogenesis
Brown	AT1G79230	<i>STR1</i>	Mitochondrial Sulfurtransferase 1	Rhodanese; Sulfur transfer; Cysteine degradation
Brown	AT1G67490	<i>KNF</i>	Alpha Glucosidase 1	Early step in N-glycan trimming of glycoproteins
Brown	AT1G67320	<i>EMB2813</i>	DNA Polymerase Alpha; Primase Subunit	Initiation of DNA replication
Brown	AT2G15690	<i>DYW2</i>	PPR Protein	Editing of chloroplast and mitochondrial transcripts; Interacts with NUWA
Brown	AT2G18510	<i>EMB2444</i>	Spliceosome-Associated Protein	RNA recognition motif (RRM) protein; RNA processing
Brown	AT2G29530	<i>TIM10</i>	Mitochondrial Inner Membrane Protein	Mitochondrial protein import
Brown	AT2G37560	<i>ORC2</i>	Origin Recognition Complex Subunit	DNA replication; Chromatin structure; Gene silencing
Brown	AT2G44520	<i>COX10</i>	Mitochondrial Farnesyltransferase	Cytochrome C oxidase biogenesis
Brown	AT2G45690	<i>SSE</i>	Peroxisomal Biogenesis Factor	Required for protein and oil body biogenesis
Cyan	AT5G08170	<i>EMB1873</i>	Agmatine Iminohydrolase	Putrescine biosynthesis
Cyan	AT1G08510	<i>FATB</i>	Acyl-Acyl Carrier Protein Thioesterase	Saturated fatty acid biosynthesis
Cyan	AT2G27100	<i>SERRATE</i>	Zinc Finger Protein	Pre-mRNA splicing; miRNA biogenesis
Darkgreen	AT1G19770	<i>PUP14</i>	Purine Permease Transporter	Uptake of bioactive cytokinins to cytosol
Darkgreen	AT2G28620	<i>RSW7</i>	Kinesin-5 Protein	Microtubule organization in mitotic spindles
Darkgrey	AT2G41720	<i>EMB2654</i>	PPR Protein	Trans-splicing of plastid rps12 transcript
Darkred	AT1G15110	<i>PSS1</i>	Phosphatidylserine Synthase	Phosphatidylserine (membrane phospholipid) biosynthesis
Darkturquoise	AT3G05680	<i>EMB2016</i>	m6A Methyltransferase Complex Subunit	N6-adenosine methylation of mRNA; mRNA modification, splicing, metabolism
Darkturquoise	AT1G63700	<i>YDA</i>	MAP3K Protein Kinase	Protein phosphorylation, Signal transduction pathways

Darkturquoise	AT2G30920	<i>EMB3002</i>	Hexaprenyldihydroxybenzoate Methyltransferase	Ubiquinone biosynthesis in mitochondria
Green	AT2G45330	<i>EMB1067</i>	2' tRNA Phosphotransferase	Catalytic role in tRNA splicing
Green	AT2G45270	<i>GCP1</i>	Mitochondrial Glycoprotease	HSP70 superfamily protein
Green	AT5G11040	<i>TRSL120</i>	TRAPP1 Tethering Factor	Membrane trafficking; Cell plate assembly during cytokinesis
Green	AT5G14800	<i>EMB2772</i>	Proline-5-Carboxylate (P5C) Reductase;Proline Biosynthetic Enzyme	Catalyzes final step in proline biosynthesis from glutamate and ornithine
Green	AT5G26030	<i>FC1</i>	Ferrochelatase	Final enzyme for haem formation in the tetrapyrrole biosynthetic pathway
Green	AT5G24670	<i>EMB2820</i>	tRNA Adenosine Deaminase Subunit	Modification of wobble position of cytosolic tRNAs
Green	AT5G62440	<i>DOM1</i>	Uncertain	Nuclear protein; Similar to tomato LeDCLPutative role in ribosome biogenesis
Green	AT5G51430	<i>EYE</i>	Subunit of Golgi COG Complex	Vesicle trafficking; Golgi structure and function
Green	AT5G51200	<i>EMB3142</i>	Nuclear Pore Complex Protein (Nup205)	Nuclear protein export
Green	AT5G50210	<i>QS</i>	NAD Biosynthesis	Catalyzes second step in NAD biosynthesis from aspartate in plastids
Green	AT5G49930	<i>EMB1441</i>	Uncertain	Putative RNA binding protein; Possible role in ribosome biogenesis
Green	AT5G40480	<i>EMB3012</i>	Nuclear Pore Complex Protein (Nup210)	Nuclear protein export
Green	AT5G39710	<i>EMB2745</i>	PPR Protein	RNA binding protein; Organellar gene function
Green	AT5G22370	<i>EMB1705</i>	GTP Binding Protein	Microtubule organization
Green	AT5G08130	<i>BIM1</i>	bHLH Protein Interactor of Transcription Factors	Brassinosteroid signaling
Green	AT5G05560	<i>EMB2771</i>	E3 Ubiquitin Ligase Subunit	Anaphase promoting complex subunit; Cell cycle regulation
Green	AT5G04920	<i>VPS36</i>	Endosomal Sorting Complex (ESCRT-II) Subunit	Vacuolar biogenesis; Plasma membrane protein turnover
Green	AT3G55610	<i>P5CS2</i>	Delta 1-Pyrroline-5-Carboxylate Synthetase	Proline biosynthesis; Rate-limiting step
Green	AT3G55510	<i>RBL</i>	Uncertain	Noc2 domain protein
Green	AT3G48110	<i>EDD</i>	Glycine tRNA Synthetase	Translation in chloroplasts
Green	AT4G39920	<i>POR</i>	Tubulin Folding Cofactor C	Regulation of tubulin folding and microtubule dynamics
Green	AT4G39120	<i>IMPL2</i>	Histidinol-Phosphate Phosphatase	Histidine biosynthesis
Green	AT4G34200	<i>PGDH1</i>	3-Phosphoglycerate Dehydrogenase	Phosphoserine pathway of serine biosynthesis in plastids
Green	AT4G26900	<i>HISN4</i>	Histidine Biosynthetic Enzyme	Histidine biosynthesis
Green	AT4G20060	<i>EMB1895</i>	snRNA Processing Factor	snRNA 3' end maturation; Pre-mRNA splicing
Green	AT4G20090	<i>EMB1025</i>	PPR Protein	RNA binding protein; Organellar gene function
Green	AT4G05410	<i>YAO</i>	Nucleolar WD-40 Repeat Protein; Putative U3 snoRNP Complex Subunit	Potential role in 18S pre-rRNA processing
Green	AT4G03430	<i>EMB2770</i>	Spliceosome-Interacting Protein	Pre-mRNA splicing factor
Green	AT4G00450	<i>CCT</i>	Transcriptional Regulator	Modulates function of Mediator complex
Green	AT1G19850	<i>MP</i>	B3 Domain Transcription Factor	Transcriptional regulation; Auxin response pathway
Green	AT3G24560	<i>RSY3</i>	Putative Lysidine-tRNA-Ile Synthetase	Chloroplast tRNA editing
Green	AT3G07060	<i>EMB1974</i>	Unknown	None
Green	AT3G06350	<i>EMB3004</i>	Dehydroquinase Dehydratase; Shikimate Dehydrogenase	Chorismate biosynthesis
Green	AT3G02280	<i>ATR3</i>	Cytochrome P450 Reductase Like	NR1 subfamily of diflavin reductases; Potential role in Fe-S cluster biogenesis
Green	AT3G09070	<i>OPS</i>	Uncertain	Polar-localized, plasma membrane-associated protein;Role in protophloem development; cotyledon vascular complexity
Green	AT1G17690	<i>NOF1</i>	Nucleolar Protein	None
Green	AT1G19080	<i>TTN10</i>	GIN5 Complex Subunit	Initiation of replication
Green	AT1G12360	<i>KEU</i>	Cytokinesis-Related Sec1 Protein	Regulator of vesicle trafficking; Binds to cytokinesis-specific KNOLLE protein
Green	AT1G68990	<i>MGP3</i>	Mitochondrial Phage-Type RNA Polymerase	Transcription of mitochondrial genes
Green	AT1G71440	<i>PFI</i>	Tubulin Folding Cofactor E	Regulation of tubulin folding and microtubule dynamics
Green	AT1G67960	<i>POD1</i>	Uncertain	Proposed role in ER protein retention
Green	AT1G14610	<i>TWN2</i>	Valine tRNA Synthetase	Translation in mitochondria and cytosol
Green	AT1G43710	<i>EMB1075</i>	Serine Decarboxylase	Ethanolamine biosynthesis
Green	AT1G20050	<i>HYD1</i>	Sterol Isomerase	Catalyzes sterol biosynthetic step downstream of FACKEL
Green	AT1G50030	<i>TOR</i>	Protein Kinase (Target of Rapamycin)	Signaling pathways
Green	AT1G49510	<i>EMB1273</i>	Unknown	Putative chloroplast protein
Green	AT1G20960	<i>EMB1507</i>	Spliceosome-Associated RNA Helicase	RNA processing; Splicing of FLC transcripts
Green	AT1G75660	<i>XRN3</i>	5'-3' Exoribonuclease	Nuclear degradation of aberrant RNAs; Suppressor of post-transcriptional gene silencing
Green	AT2G31530	<i>EMB2289</i>	Chloroplast Inner Envelope Translocase	Import and integration of inner envelope membrane proteins
Green	AT2G21710	<i>EMB2219</i>	Uncertain	Chloroplast-localized mTERF domain protein;Putative role in chloroplast gene expression
Green	AT2G31340	<i>EMB1381</i>	Unknown	None
Green	AT1G08840	<i>EMB2411</i>	DNA Replication Helicase; Nuclease	DNA replication and repair; Okazaki fragment metabolism
Green	AT2G38020	<i>VCL1</i>	Vacuolar Sorting Protein (Vps16)	Vacuole biogenesis; Protein trafficking to the vacuole
Green	AT2G28880	<i>EMB1997</i>	Bifunctional PABA Synthase; Glutamine Amidotransferase	Para-aminobenzoic acid / folate biosynthesis
Green	AT2G32280	<i>VCC</i>	Unknown	Plant-specific protein; Role in cotyledon vascular complexity
Green	AT2G22870	<i>EMB2001</i>	Uncertain	Organelle-targeted GTPase (EngB/YihA family);Putative ribosome biogenesis GTPase
Green	AT2G34780	<i>EMB1611</i>	Uncertain	Putative role in promoting cell division
GreenYellow	AT5G57930	<i>EMB1629</i>	Putative Role in Accumulation of Fe-S Complexes	Chloroplast-localized protein
GreenYellow	AT4G04350	<i>EMB2369</i>	Leucine tRNA Synthetase	Translation in chloroplasts
GreenYellow	AT4G02790	<i>EMB3129</i>	Chloroplast-Targeted RbgA GTPase	Chloroplast ribosome biogenesis
GreenYellow	AT3G01370	<i>CFM2</i>	Chloroplast Intron Splicing Factor	Splicing of plastid group II introns
GreenYellow	AT2G31305	<i>INH3</i>	Inhibitor of Protein Phosphatase 1 Catalytic Activity	Regulation of signaling pathways
GreenYellow	AT1G70070	<i>ISE2</i>	RNA Helicase	Chloroplast RNA processing
GreenYellow	AT2G25660	<i>EMB2410</i>	Unknown	None

GreenYellow	AT2G30410	<i>KIS</i>	Tubulin Folding Cofactor A	Regulation of tubulin folding and microtubule dynamics
Grey	AT3G57870	<i>EMB1637</i>	SUMO Conjugating Enzyme	Protein modification; Role in stress response; Cell cycle control
Grey	AT3G27750	<i>EMB3123</i>	PPR Protein	Splicing of specific group II introns in plastids
Grey60	AT5G13710	<i>SMT1</i>	Sterol Methyltransferase	Sterol biosynthesis; Modulation of cholesterol levels
Lightcyan	AT3G54170	<i>FIP37</i>	m6A Methyltransferase Complex Subunit	N6-adenosine methylation of mRNA; mRNA modification, splicing, metabolism
Lightcyan	AT2G43650	<i>EMB2777</i>	Small Subunit (SSU) Processome Complex Interacting Protein	Nucleolar protein; Proposed role in rRNA biogenesis
LightGreen	AT4G31160	<i>DCAF1</i>	Nuclear Ubiquitin E3 Ligase	Protein degradation
LightYellow	AT4G31770	<i>DBR1</i>	Lariat Debranching Enzyme	Removal of spliced introns; Degradation of lariat RNAs; Regulation of miRNA biogenesis
LightYellow	AT3G12080	<i>EMB2738</i>	Uncertain	Putative ribosome biogenesis GTPase
LightYellow	AT1G21310	<i>RSH</i>	Cell Wall Hydroxyproline-Rich Glycoprotein; Extensin	Cell wall protein required for normal cell shape and positioning of cell plate during cytokinesis
LightYellow	AT1G32930	<i>GALT31A</i>	Galactosyltransferase; Galactosylation of Arabinogalactan Protein (AGP) Side Chains in Golgi Apparatus	Elongation of B-1,6-galactan side chains on AGPs
LightYellow	AT2G26890	<i>GRV2</i>	DnaJ Domain Protein (RME-8)	Endocytosis; Vacuolar sorting; Protein trafficking
Magenta	AT3G54350	<i>EMB1967</i>	Forkhead-Associated (FHA) Domain Protein	Putative role in signal transduction pathways
Magenta	AT4G02720	<i>MAS2</i>	Perinucleolar Protein; Homolog of Human NKAP	45S rDNA silencing; Interacts with splicing and ribosome biogenesis proteins
Magenta	AT1G01370	<i>CENH3</i>	Centromere-Specific Histone	Component of centromeric nucleosome
Magenta	AT1G64570	<i>DUO3</i>	Homeodomain Protein	Putative transcriptional regulator
Magenta	AT1G48410	<i>AGO1</i>	Argonate; Effector in Small RNA-Based Gene Silencing	Cleavage or translational inhibition of target RNAs; Methylation of target DNAs
Magenta	AT2G36230	<i>HISN3</i>	BBMII Isomerase; Histidine Biosynthetic Enzyme	Catalyzes third step in histidine biosynthesis
Magenta	AT1G65440	<i>SPT6L</i>	Transcript Elongation Factor	Proposed role in transcription initiation and chromatin structure
Magenta	AT1G09770	<i>CDC5</i>	MYB Domain Transcription Factor	Cell cycle control; Proposed role in miRNA biogenesis
Magenta	AT2G39080	<i>EMB2799</i>	Uncertain	Potential role in chloroplast nutrient transport
Midnightblue	AT4G19350	<i>EMB3006</i>	Unknown	None
Midnightblue	AT2G26830	<i>EMB1187</i>	Choline/Ethanolamine Kinase	Enzyme in phospholipid (phosphatidylcholine) biosynthesis
Orange	AT1G24706	<i>EMB2793</i>	THO/TREX Complex Subunit	RNA transport and splicing; miRNA biogenesis
Pink	AT4G29910	<i>EMB2798</i>	Origin of Replication Complex	Initiation of replication
Pink	AT2G02150	<i>EMB2794</i>	Putative PPR Protein	Putative RNA binding protein
Purple	AT3G52590	<i>EMB2167</i>	Ubiquitin Fused to Ribosomal Protein L40	Ubiquitin ribosomal fusion protein
Purple	AT1G19800	<i>TGD1</i>	Chloroplast Envelope Protein; ABC Transporter	Import of lipids into chloroplasts
Purple	AT1G08130	<i>LIG1</i>	DNA Ligase	DNA replication and repair; Component of DNA demethylation machinery
Purple	AT2G04530	<i>TRZ2</i>	tRNase Z Enzyme; Plastid tRNA Processing	Cleavage of 3' end of plastid tRNA precursor
Red	AT5G19620	<i>OEP80</i>	Chloroplast Outer Envelope Protein	Uncertain role in chloroplast protein import
Red	AT5G63050	<i>EMB2759</i>	Unknown	None
Red	AT5G62410	<i>TTN3</i>	SMC2 Condensin	Chromosome condensation
Red	AT5G57590	<i>BIO1</i>	7-KAP, DAP Aminotransferase; Dethiobiotin Synthetase	Biotin synthesis in mitochondria; Bifunctional (BIO3-BIO1) protein
Red	AT5G48600	<i>SMC4</i>	Condensin Subunit	Chromatin condensation; Chromosome segregation; Silencing of pericentromeric transposons
Red	AT5G18570	<i>EMB3138</i>	Chloroplast Ogb-Like GTPase	Plastid ribosome biogenesis
Red	AT3G61780	<i>EMB1703</i>	Unknown	None
Red	AT3G54670	<i>TTN8</i>	SMC1 Cohesin	Chromosomal ATPase; Sister chromatid cohesion; Chromosome segregation
Red	AT3G54720	<i>AMP1</i>	Putative Glutamate Carboxypeptidase	Similar to N-acetyl a-linked acidic dipeptidase; Precise biochemical function uncertain
Red	AT4G39620	<i>EMB2453</i>	PPR Protein	Proposed role in chloroplast tRNA maturation; Ribosome biogenesis
Red	AT4G38430	<i>RopGEF1</i>	Guanine Nucleotide Exchange Factor	Activator of Rho GTPases of plants
Red	AT4G35540	<i>PTF2</i>	Plant-Specific TFIIB-Related Protein	General transcription factor
Red	AT4G33460	<i>EMB2751</i>	ABC Transporter	Proposed role in chloroplast membrane transport
Red	AT4G31780	<i>EMB2797</i>	MGDG (Galactolipid) Synthesis	Monogalactosyldiacylglycerol biosynthesis
Red	AT3G20740	<i>FIE</i>	Polycomb Repressive Complex Subunit	Chromatin modification; Histone methylation
Red	AT3G04340	<i>EMB2458</i>	Chloroplast AAA-ATPase; Ycf2-FtsHi Complex Subunit	Required for chloroplast protein import
Red	AT1G55350	<i>EMB1275</i>	Calpain-Type Cysteine Protease	Homolog of maize DEK1; Transmembrane protein required for mechanosensitive calcium ion channel function
Red	AT1G53580	<i>ETHE1</i>	Mitochondrial Sulfur Dioxigenase	Sulfide detoxification
Red	AT1G80260	<i>EMB1427</i>	Gamma Tubulin; GCP5 Subunit	Microtubule nucleation
Red	AT1G10510	<i>EMB2004</i>	Uncertain	Leucine-rich repeat protein; Chloroplast localized; Similar to ribonuclease inhibitor proteins
Red	AT1G67440	<i>EMB1688</i>	Uncertain	Putative ribosome biogenesis GTPase
Red	AT2G17800	<i>ROP3</i>	ROP GTPase	Auxin transport and response
Red	AT2G41350	<i>EMB2819</i>	Augmin Complex Subunit	Microtubule dynamics; Mitotic spindle formation
Red	AT2G03150	<i>EMB1579</i>	Uncertain	Calcium binding protein
Red	AT2G34650	<i>PID</i>	Serine-Threonine Protein Kinase	Positive regulator of polar auxin transport
Red	AT2G44190	<i>EMB3116</i>	Novel Microtubule-Associated Protein	Endosperm nuclear division and cellularization
RoyalBlue	AT4G13940	<i>EMB1395</i>	S-Adenosyl Homocysteine Hydrolase	Amino acid and nucleotide metabolism; Indirect role in gene silencing
Salmon	AT5G46210	<i>CUL4</i>	E3 Ubiquitin Ligase Subunit	None
Salmon	AT1G69270	<i>RPK1</i>	Receptor-Like Protein Kinase	Signaling pathways
Salmon	AT1G65450	<i>GLAUCE</i>	BAHD Family Acyltransferase	Unknown metabolic role in female gametophyte central cell; Required for fusion with second sperm cell
Salmon	AT2G38670	<i>PECT1</i>	Phosphatidylethanolamine Biosynthetic Enzyme	Rate-limiting enzyme in CDP-Etn pathway; Mitochondrial localized protein
Tan	AT4G21190	<i>EMB1417</i>	PPR Protein	RNA binding protein; Organellar gene function
Tan	AT3G20070	<i>TTN9</i>	Unknown	None
Turquoise	AT1G67730	<i>KCR1</i>	B-Ketoacyl-Coenzyme A Reductase	Long-chain fatty acid biosynthesis
Turquoise	AT1G28300	<i>LEC2</i>	B3 Domain Transcription Factor	Transcriptional regulation

Turquoise	AT5G13510	<i>EMB3136</i>	Chloroplast Ribosomal Protein L10	Translation in chloroplasts
Turquoise	AT5G08415	<i>LIP1</i>	Lipoyl Synthase	Lipoamide biosynthesis; Plastid-localized lipoylation of metabolic enzymes
Turquoise	AT4G36810	<i>GGPPS11</i>	Geranylgeranyl Diphosphate Synthase	Isoprenoid biosynthesis in plastids and cytosol
Turquoise	AT1G77360	<i>APPR6</i>	Mitochondrial PPR Protein	5' maturation and translational initiation of mitochondrial ribosomal protein S3 mRNA
Turquoise	AT5G27720	<i>EMB1644</i>	U6 snRNA Associated Protein	Component of spliceosome; Role in pre-mRNA splicing
Turquoise	AT5G64580	<i>EMB3144</i>	Chloroplast AAA-ATPase; Ycf2-FtsHi Complex Subunit	Required for chloroplast protein import
Turquoise	AT5G63920	<i>TOP3a</i>	Topoisomerase	DNA synthesis and repair
Turquoise	AT5G61410	<i>EMB2728</i>	Ribulose-5-Phosphate-3-Epimerase	Role in Calvin cycle; Oxidative pentose phosphate pathway
Turquoise	AT5G58250	<i>EMB3143</i>	Unknown	Chloroplast-localized protein
Turquoise	AT5G53860	<i>EMB2737</i>	Uncertain	Chloroplast-localized, DnaJ-like protein; Putative chaperone
Turquoise	AT5G52920	<i>PKP1</i>	Plastidic Pyruvate Kinase B1 Subunit	Fatty acid and seed oil biosynthesis
Turquoise	AT5G51600	<i>PLE</i>	Microtubule-Associated Protein	Coordination of microtubule and membrane dynamics during cytokinesis
Turquoise	AT5G50390	<i>EMB3141</i>	PPR Protein	RNA binding protein; Organellar gene function
Turquoise	AT5G50280	<i>EMB1006</i>	PPR Protein	RNA binding protein; Organellar gene function
Turquoise	AT5G48230	<i>EMB1276</i>	Acetoacetyl CoA Thiolase	Cytosolic mevalonate pathway of isoprenoid biosynthesis
Turquoise	AT5G40950	<i>PRPL27</i>	Chloroplast Ribosomal Protein	Translation in chloroplasts
Turquoise	AT5G24400	<i>EMB2024</i>	6-Phosphogluconolactonase	Role in pentose phosphate pathway
Turquoise	AT5G22640	<i>EMB1211</i>	Chloroplast Protein Import Complex Subunit	Component of 1 MD chloroplast inner membrane protein import complex
Turquoise	AT5G16390	<i>CAC1A</i>	Biotin Carboxyl Carrier Protein	Heteromeric acetyl-CoA carboxylase subunit; Fatty acid biosynthesis in plastids
Turquoise	AT5G14320	<i>EMB3137</i>	Chloroplast Ribosomal Protein S13	Translation in chloroplasts
Turquoise	AT5G13690	<i>CYL1</i>	Alpha-N-Acetyl-Glucosaminidase	Arabinogalactan protein metabolism
Turquoise	AT5G10480	<i>PAS2</i>	3-Hydroxyl-Acyl-CoA Dehydratase; Elongase Complex Subunit	Very-long-chain fatty acid biosynthesis
Turquoise	AT5G07280	<i>EXS</i>	LRR Receptor Kinase	Signal transduction pathway
Turquoise	AT5G04560	<i>DME</i>	DNA Glycosylase	DNA demethylation in central cell of female gametophyte, vegetative cell of male gametophyte
Turquoise	AT5G04810	<i>PPR4</i>	PPR Protein	Trans-splicing of chloroplast rps12 transcript
Turquoise	AT5G04660	<i>CYP77A4</i>	Cytochrome P450	Epoxidase of unsaturated fatty acids; ER-localized protein
Turquoise	AT5G03800	<i>EMB1899</i>	PPR Protein	RNA binding protein; Organellar gene function
Turquoise	AT3G63490	<i>EMB3126</i>	Chloroplast Ribosomal Protein L1	Translation in chloroplasts
Turquoise	AT5G01075	<i>TWS1</i>	Unknown	Small protein localized to endoplasmic reticulum
Turquoise	AT3G63190	<i>HFP108</i>	Chloroplast Ribosome Recycling Factor	Required for efficient chloroplast translation
Turquoise	AT3G57560	<i>NAGK</i>	Acetylglutamate Kinase	Arginine biosynthesis
Turquoise	AT3G54660	<i>EMB2360</i>	Chloroplast Glutathione Reductase	Protection against oxidative stress
Turquoise	AT3G54320	<i>WR11</i>	AP2/EREB Domain Transcription Factor	Regulation of storage compound biosynthesis
Turquoise	AT3G52940	<i>FK</i>	Sterol C-14 Reductase	Sterol biosynthesis during embryo development
Turquoise	AT3G47520	<i>pNAD-MDH</i>	Plastid NAD-Dependent Malate Dehydrogenase	Redox homeostasis; Heterotrophic metabolism; Component of plastid Ycf2 complex required for protein import
Turquoise	AT3G46740	<i>TOC75-III</i>	Chloroplast Import Protein	Protein translocation channel in plastid outer membrane
Turquoise	AT4G34620	<i>SSR16</i>	Mitochondrial Ribosomal Protein S16	Translation in mitochondria and chloroplasts
Turquoise	AT4G33680	<i>AGD2</i>	LL-Diaminopimelate Aminotransferase	Lysine biosynthesis
Turquoise	AT4G29060	<i>EMB2726</i>	Translation Elongation Factor	Translation in chloroplasts
Turquoise	AT4G28210	<i>EMB1923</i>	Unknown	None
Turquoise	AT4G00220	<i>JLO</i>	LOB Domain Transcription Factor	Auxin signaling pathways
Turquoise	AT3G29290	<i>EMB2076</i>	PPR Protein	RNA binding protein; Organellar gene function
Turquoise	AT3G15190	<i>PRPS20</i>	Chloroplast Ribosomal Protein	Translation in chloroplasts
Turquoise	AT3G12670	<i>EMB2742</i>	CTP Synthase; UTP-Ammonia Ligase	Ribonucleotide metabolism
Turquoise	AT3G18390	<i>EMB1865</i>	Chloroplast Splicing Factor	Splicing of plastid group II introns
Turquoise	AT3G19810	<i>DUF177A</i>	Uncertain	23S rRNA accumulation
Turquoise	AT3G16290	<i>EMB2083</i>	Chloroplast AAA-ATPase; Ycf2-FtsHi Complex Subunit	Required for chloroplast protein import
Turquoise	AT3G25920	<i>RPL15</i>	Chloroplast Ribosomal Protein	Translation in chloroplasts
Turquoise	AT3G25860	<i>PLE2</i>	Chloroplast Pyruvate Dehydrogenase Complex E2 Subunit	Acetyl-CoA formation in plastids
Turquoise	AT3G26790	<i>FUS3</i>	B3 Domain Transcription Factor	Regulator of gene expression during embryogenesis
Turquoise	AT3G26744	<i>ICE1</i>	bHLH Transcriptional Activator	Regulation of stomatal development, cold tolerance, and endosperm breakdown
Turquoise	AT3G02660	<i>EMB2768</i>	Tyrosine tRNA Synthetase	Translation in mitochondria and chloroplasts
Turquoise	AT3G04790	<i>EMB3119</i>	Ribulose-5-Phosphate Isomerase	Carbohydrate metabolism
Turquoise	AT1G12410	<i>EMB3146</i>	Chloroplast Clp Protease Subunit	None
Turquoise	AT2G43360	<i>BIO2</i>	Biotin Synthase	Catalyzes final step in biotin synthesis in mitochondria
Turquoise	AT1G62340	<i>ALE1</i>	Subtilisin-Like Serine Protease	Cell signaling pathways; Possible role in processing of peptide ligands
Turquoise	AT1G06950	<i>TIC110</i>	Chloroplast Inner Membrane Protein	Chloroplast protein import
Turquoise	AT1G21970	<i>LEC1</i>	HAP3 Subunit of CCAAT-Binding Transcription Factor	Transcriptional regulation
Turquoise	AT1G02560	<i>CLPP5</i>	Chloroplast ClpP Protease Subunit	None
Turquoise	AT1G02680	<i>TAF13</i>	Transcriptional Regulator	Functions with PRC2 complex; Transcriptional repressor
Turquoise	AT1G07320	<i>EMB2784</i>	Chloroplast Ribosomal Protein L4	Translation in chloroplasts
Turquoise	AT1G75350	<i>EMB2184</i>	Chloroplast Ribosomal Protein L31	Translation in chloroplasts
Turquoise	AT1G04950	<i>EMB2781</i>	TATA Box Associated Factor; TFIID Subunit	Regulation and initiation of transcription
Turquoise	AT1G34430	<i>EMB3003</i>	Dihydrolipoamide S-Acetyltransferase; Chloroplast PyruvateDecarboxylase Complex, Putative E3 Binding Protein	Acetyl-CoA formation
Turquoise	AT1G12770	<i>EMB1586</i>	Mitochondrial RNA Helicase	RNA binding protein; Proposed role in processing mitochondrial transcripts

Turquoise	AT1G18370	<i>HIK</i>	Kinesin Required for Cytokinesis	Localized to site of cell plate formation
Turquoise	AT1G50650	<i>KRS</i>	Endosperm-Specific, Cysteine-Rich Peptide	STIG1 family of small proteins; Required for normal embryo-endosperm adhesion
Turquoise	AT1G35680	<i>RPL21C</i>	Chloroplast Ribosomal Protein L21	Translation in chloroplasts
Turquoise	AT1G74970	<i>TWN3</i>	Chloroplast Ribosomal Protein S9	Translation in chloroplasts
Turquoise	AT1G74960	<i>FAB1</i>	Ketoacyl Carrier Protein Synthase	Elongation of 16:0-ACP to 18:0-ACP in plastids
Turquoise	AT1G48350	<i>EMB3105</i>	Chloroplast Ribosomal Protein L18	Translation in chloroplasts
Turquoise	AT1G17220	<i>FUG1</i>	Translation Initiation Factor	Translation in chloroplasts
Turquoise	AT1G62750	<i>SCO1</i>	Plastid Elongation Factor G	Translation in chloroplasts
Turquoise	AT1G11680	<i>EMB1738</i>	Obtusifoliiol 14-Alpha Demethylase	Cytochrome P450 monooxygenase; Sterol biosynthetic enzyme
Turquoise	AT1G23400	<i>CAF2</i>	Chloroplast Intron Splicing Factor	Splicing of plastid group II introns
Turquoise	AT2G05170	<i>VPS11</i>	Vacuolar Tethering Complex Subunit	Vacuolar biogenesis
Turquoise	AT1G78630	<i>EMB1473</i>	Chloroplast Ribosomal Protein L13	Translation in chloroplasts
Turquoise	AT1G36160	<i>ACC1</i>	Acetyl-CoA Carboxylase	Very-long-chain fatty acid biosynthesis in cytosol
Turquoise	AT1G30610	<i>EMB2279</i>	PPR Protein	Plastid rpl2 and tmK intron splicing
Turquoise	AT2G14170	<i>MMSD</i>	Methylmalonate Semialdehyde Dehydrogenase	Valine degradation in mitochondria
Turquoise	AT2G27170	<i>TTN7</i>	SMC3 Cohesin	Sister chromatid cohesion; Chromosome segregation
Turquoise	AT2G01860	<i>EMB975</i>	PPR Protein	RNA binding protein; Organellar gene function
Turquoise	AT2G36000	<i>EMB3114</i>	Uncertain	Chloroplast-localized mTERF domain protein
Turquoise	AT2G28000	<i>SLP</i>	Chaperonin 60 alpha 1	Protein folding in chloroplasts
Turquoise	AT1G43170	<i>EMB2207</i>	Ribosomal Protein L3A	Translation in cytosol
Turquoise	AT1G05190	<i>EMB2394</i>	Chloroplast Ribosomal Protein L6	Translation in chloroplasts
Turquoise	AT1G08560	<i>KN</i>	Cytokinesis-Specific Syntaxin	Vesicle fusion in cell division plane
Turquoise	AT2G01210	<i>ZAR1</i>	Plasma Membrane LRR-RLK	Signaling pathways; Calmodulin binding
Turquoise	AT2G37920	<i>EMB1513</i>	Uncertain	Similar to copper transporter proteins
Turquoise	AT2G24090	<i>PRPL35</i>	Chloroplast Ribosomal Protein	Translation in chloroplasts
Turquoise	AT2G03050	<i>EMB93</i>	Plastid mTERF-Related Protein	Plastid signaling pathways
Turquoise	AT2G32590	<i>EMB2795</i>	Non-SMC Condensin Complex Subunit H	Sister chromatid segregation in mitosis
Turquoise	AT2G19450	<i>TAG1</i>	Diacylglycerol Transferase	Storage lipid biosynthesis; Catalyzes final step in triacylglycerol biosynthetic pathway
Turquoise	AT2G30200	<i>EMB3147</i>	ACP-S-Malonyltransferase	Fatty acid biosynthesis
Turquoise	AT2G33800	<i>EMB3113</i>	Chloroplast Ribosomal Protein S5	Translation in chloroplasts
Yellow	AT1G48850	<i>EMB1144</i>	Chorismate Synthase	Aromatic amino acid biosynthesis
Yellow	AT5G16715	<i>EMB2247</i>	Valine tRNA Synthetase	Translation in chloroplasts
Yellow	AT5G15540	<i>EMB2773</i>	Cohesin-Loading Complex Subunit	Cohesin-chromatin interactions; Sister chromatid cohesion
Yellow	AT5G14760	<i>AO</i>	L-Aspartate Oxidase; NAD Biosynthetic Enzyme	Catalyzes first step in NAD biosynthesis from aspartate in plastids
Yellow	AT5G56270	<i>WRKY2</i>	WRKY Transcription Factor	Zygote polarity after fertilization
Yellow	AT5G54440	<i>CLUB</i>	TRAPP1 Tethering Factor	Membrane trafficking; Cell plate assembly during cytokinesis
Yellow	AT5G51340	<i>SCC4</i>	Cohesin Loading Complex, Kleisin Subunit	TPR protein; Chromatin structure maintenance
Yellow	AT5G49160	<i>MET1</i>	DNA Methyltransferase	DNA (CG) methylation
Yellow	AT5G43810	<i>ZLL</i>	Argonaute / EIF2C Family Protein	Small RNA binding protein; Cleavage or translationalinhibition of target RNAs
Yellow	AT5G08080	<i>SYPL32</i>	Cytokinesis-Specific SNARE Protein	Membrane vesicle fusion in cytokinesis
Yellow	AT3G54010	<i>PAS1</i>	Immunophilin-Like FK506 Binding Protein	Interacts with fatty acid elongase complex; Required for very-long-chain fatty acid biosynthesis
Yellow	AT4G30580	<i>EMB1995</i>	Plastidic Lysophosphatidic Acid Acyltransferase	Fatty acid and phospholipid metabolism
Yellow	AT4G24900	<i>TTL</i>	Unknown	C2H2 domain protein; Nuclear localized
Yellow	AT4G23100	<i>RML1</i>	Gamma-Glutamylcysteine Synthetase	First enzyme in glutathione biosynthetic pathway;Initiation and maintenance of cell division
Yellow	AT1G18640	<i>PSP1</i>	Phosphoserine Phosphatase	Phosphoserine pathway of serine biosynthesis in plastids
Yellow	AT3G23110	<i>EMB2800</i>	LRR Receptor-Like Protein	Putative signaling function
Yellow	AT3G18110	<i>EMB1270</i>	PPR Protein	RNA binding protein; Organellar gene function
Yellow	AT1G10910	<i>EMB3103</i>	PPR Protein	RNA binding protein; Organellar gene function
Yellow	AT1G32490	<i>EMB2733</i>	RNA Helicase	Proposed role in pre-mRNA splicing
Yellow	AT1G01040	<i>SUS1</i>	RNA Helicase; Dicer-Like Enzyme	Micro RNA biogenesis; Pri-miRNA processing
Yellow	AT1G34770	<i>NSE3</i>	Non-SMC Component of SMC5/6 Complex	DNA repair and genome stability
Yellow	AT1G50240	<i>TIO</i>	Protein Kinase; Ortholog of FUSED in Animal Systems	Signaling pathways required for cytokinesis
Yellow	AT1G79560	<i>EMB1047</i>	Chloroplast AAA-ATPase; Ycf2-FtsHi Complex Subunit	Required for chloroplast protein import
Yellow	AT1G55540	<i>LNO1</i>	Nucleoporin; Nuclear Pore Complex Subunit	RNA transport from nucleus to cytosol
Yellow	AT2G20300	<i>ALE2</i>	Receptor-Like Protein Kinase	Promotion of protoderm differentiation and cotyledon formation
Yellow	AT2G35650	<i>CSLA7</i>	Cellulose-Synthase-Like Glycosyltransferase; Beta-Mannan Synthase	Synthesis of cell wall polysaccharides
Yellow	AT2G25710	<i>HCS1</i>	Holocarboxylase Synthetase	Biotin attachment to carboxylases and decarboxylases