

## List and Description of Genes Relevant to This Proposal

GENE Symbol	Stock number	Allele symbol	Gene Full Name	Accession Number		Product Name	Description	Citation
				TAIR	GenBank			
ADG1	CS3094	adg1-1 (Col)		Gene:3356178	U72351	ADP GLUCOSE PYROPHOSP HORYLASE SMALL SUBUNIT		[WLY+98]
AG	CS25	ag-1 (Ler)	AGAMOUS	Gene:1944469		AGAMOUS PROTEIN	Floral homeotic gene encoding a MADS domain transcription factor. Specifies floral meristem and carpel and stamen identity. Binds CARG box sequences.	[PNF96]
AP1 (AGL7)	CS28	ap1-1 (Ler)	APETALA 1 (FLORAL HOMEOTIC PROTEIN APETALA 1)	Gene:1944474	Z16421	AGL7	Floral homeotic gene encoding a MADS domain protein homologous to SRF transcription factors. Specifies floral meristem and sepal identity. Required for the transcriptional activation of AGAMOUS. Interacts with LEAFY.	[IS90]
AP2 (FLO2)	CS3084	ap2-9 (Ler)	APETALA 2	Gene:1944475	U12546	FLORAL HOMEOTIC PROTEIN APETALA 2	Floral homeotic gene containing an AP2-type DNA binding domain. Involved in establishing floral meristem and petal identity and in the control of seed development.	[BSM89]

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AP3	CS3085	ap3-1 (Ler)	APETELA3	Gene:1944476	M86357	FLORAL HOMEOTIC PROTEIN APETALA 3	Floral homeotic gene encoding a MADS domain protein homologous to SRF transcription factors. Specifies petal and stamen identities. Associates with PISTILLATA.	[BSM89]
CAL (AGL10)	CS6161	cal1-1, ap1-1 (Ws/Ler)	CAULIFLOWER	Gene:1944493	L36925		Floral homeotic gene encoding a MADS domain protein homologous to AP1. Enhances the flower to shoot transformation in ap1 mutants.	[KSY95]
CCA1			CIRCADIAN CLOCK ASSOCIATE D 1	Gene:2005483	U28422	MYB-RELATED DNA BINDING PROTEIN	DNA binding protein	[WKS+97]
CLF	CS8853	clf-2 (Ler)	CURLY LEAF	Gene:2005466		CLF	Similar to the product of the Polycomb-group gene Enhancer of zeste. Required for stable repression of AG and AP3. Putative role in cell fate determination.	[GPM+97]
CO	CS179	co-6 (Ler)	CONSTANS	Gene:1944846	L81120		promotes flowering and encodes a protein showing similarities to zinc finger transcription factors	[PRL+95]
CRC	CS3814	crc-1 (Ler)	CRABS CLAW (YABBIE)	Gene:1944864	AF132606	TRANSCRIPT ION FACTOR CRC	Putative transcription factor with zinc finger and helix-loop-helix domains, the later similar to HMG boxes. Involved in specifying abaxial cell fate in the carpel.	[BS99]

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CRY1 (HY4)	CS70	hy4-1 (Ler-0)	CRYPTOCHROME 1 ELONGATED HYPOCOTYL 4	CRY1: gene:1944514 HY4: gene:1944565		CRYPTOCHROME 1 APOPROTEIN	Flavin-type blue-light photoreceptor.	[AC93]
CRY2	CS108	fha-1 (Ler)	CRYPTOCHROME 2 PHOTORECEPTOR/PHOTOLYASE HOMOLOG	CRY2: gene:1944515	U43397	CRYPTOCHROME 2 APOPROTEIN	Blue light receptor mediating blue-light regulated cotyledon expansion and flowering time. Positive regulator of the flowering-time gene CONSTANS.	[LACC96]
ELF3	CS3793	elf3-7 (Col)	EARLY FLOWERING 3	Gene:1944909	AF410337 (look for At2g25920)	At2g25920/F17H15.5		[ZSJM92]
EMF1			EMBRYONIC FLOWER 1	Gene:1945087			Involved in regulating reproductive development	[YCS95]
FCA	CS172	fca-6 (Ler)	FLOWERING TIME CONTROL PROTEIN FCA ALPHA, BETA, DELTA AND GAMMA	Gene:1944544	Z82991	FLOWERING TIME CONTROL PROTEIN FCA ALPHA, BETA, DELTA AND GAMMA	Involved in the promotion of the transition of the vegetative meristem to reproductive development. Four forms of the protein (alpha, beta, delta and gamma) are produced by alternative splicing.	[FAPP96]
FKF1 (LKP1, ZTL)			LOV KELCH PROTEIN 1	FKF1: Gene:3353704 LKP1: Gene:3356321 FKF1: Gene:3356319 (FKF1-LIKE PROTEIN 2)	LKP1:AB038796 FKF1:AF216523 FKF1-like protein 2: AF216525	FKF1	(Landsberg erecta)	[NLR+00]

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FLC	CS189	FLC-Col (Ler/Col)	FLOWERING LOCUS C	Gene:1945110				[SA96]
FPA	CS166	fpa-2 (Ler)		Gene:1945114				[KHV91]
FRI (FLA)	CS6209	FRI-Sf2 (Col)	FRIGIDA FLOWERING LOCUS A	Gene:1945115	AF228500			[CD94]
FT	CS185	ft-3 (Ler-0)	FLOWERING LOCUS T	Gene:1944549	AB027504		FT, together with LFY, promotes flowering and is antagonistic with its homologous gene, TERMINAL FLOWER1 (TFL1)	[KKG+99]
FUL (AGL8)	CS3759	agl8-1 (Ler)	AGAMOUS-LIKE 8 or FRUITFULL	Gene:1944676	U33473	AGL8	contains MADS box and K domains	[MY95]
FVE	CS174	fve-2 (Ler)		Gene:1945130				[KHV91]
FWA	CS188	fwa-2 (Ler-0)		Gene:1945131	AF243535	homeodomain-containing transcription factor FWA	Arabidopsis thaliana homeodomain-containing transcription factor FWA	[S JL+00]
GA1	CS3825	ga1-10 (Ler)	GA REQUIRING 1	Gene:1944553	U11034	ENT-KAURENE SYNTHETASE A	Catalyzes the conversion of geranylgeranyl pyrophosphate (GGPP) to copalyl pyrophosphate (CPP) of gibberellin biosynthesis	[SK94]
GA2	CS59	ga2-1 (Ler)	GA REQUIRING 2	Gene:2005472	AF034774	ENT-KAURENE SYNTHASE	Catalyzes the second step in the cyclization of GGPP to ent-kaurene in the gibberellins biosynthetic pathway.	[YKK98]
GA3	CS60	ga3-1 (Ler)	GA REQUIRING 3	Gene:1944555	AF047719	ENT-KAURENE OXIDASE	Involved in later steps of the gibberellins biosynthetic pathway.	[HSO+98]

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GA4	CS61	ga4-1 (Ler)	GA REQUIRING 4 (GIBBERELIN 3 BETA-HYDROXYLASE)	Gene:1944556	L37126	GA4	Involved in later steps of the gibberellins biosynthetic pathway.	[CHG95]
GA5	CS62	ga5-1 (Ler)	GA REQUIRING 5	Gene:1944557		GIBBERELLIN 20-OXIDASE	Involved in later steps of the gibberellins biosynthetic pathway.	[XLW+95]
GAI	CS63	gai-1 (Ler)	GA INSENSITIVE	Gene:1944558		GAI PROTEIN	Similar to a putative transcription factor and transcriptional coactivators. Repressor of GA responses.	[PCR+97]
GI	CS183	gi-6 (Ler)	GIGANTEA	Gene:1944560	AF076686	GI	late flowering protein; photoperiod-related protein	[PSK+99]
HUA1			ENHANCER OF AG-4 1	Gene:1945163	AY024357	Arabidopsis thaliana floral homeotic protein HUA1 (HUA1)	Member of the floral homeotic AGAMOUS pathway. nuclear CCCH zinc finger protein	[LJC01]
HUA2			ENHANCER OF AG-4 2	Gene:1944563	AF116556	putative transcription factor, HUA2	Putative transcription factor. Member of the floral homeotic AGAMOUS pathway.	[CM99]
LD	CS8012	gld (Col)	LUMINIDEPENDENS Arabidopsis thaliana Wassilewskija Luminidependens mRNA, complete cds.	Gene:1945130	U03456	Arabidopsis thaliana Wassilewskija Luminidependens		[LAG+94]

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LFY	CS6280	Ify-11 (Ler)	LEAFY	Gene:1944572		LEAFY	Together with AP1, LFY promotes the transition from inflorescence to floral meristem	[SIC96]
LHY			late elongated hypocotyl		AJ006404	MYB transcription factor	Arabidopsis thaliana mRNA for LATE ELONGATED HYPOCOTYL MYB transcription factor.	[SRS+98]
LUG (LEUNIG)	CS8031	lug-1 (Ler)	Arabidopsis thaliana LEUNIG (LEUNIG)	Gene:3355513	AF277458	LEUNIG	TUP1-like; contains WD repeats	[CL00]
NAP			Arabidopsis thaliana nap gene		AJ222713			[SM98]
PGM	CS210	pgm-1 (Col)	PHOSPHOGLUCOMUTASE	Gene:1945261	AF216580	PHOSPHOGLUCOMUTASE		[CLB98]
PHH1 (FHA, CRY2)			CRYPTOCHROME 2 PHOTORECEPTOR/PHOTOLYASE HOMOLOG	PHH1: gene:1944592 FHA: gene:1944545 CRY2: gene:1944515	U62549	CRYPTOCHROME 2 APOPROTEIN	Blue light receptor mediating blue-light regulated cotyledon expansion and flowering time. Positive regulator of the flowering-time gene CONSTANS.	[HBH96]
PHYA (FHY2, FRE1, HY8)	CS6219	phyA-201 (Ler)	PHYTOCHROME A ELONGATED HYPOCOTYL 8	Gene:1944593	AC003970	PHYTOCHROME A	The sole photoreceptor mediating the FR high irradiance response (HIR). Major regulator in red-light induction of phototropic enhancement. Involved in the regulation of de-etiolation. Exists in two inter-convertible forms: Pr and Pfr (active).	[SQ89]

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PHYB (HY3)	CS6211	phyB-1 (Ler)	Arabidopsis thaliana phyB mRNA for phytochrome.	Phyb: gene:1944594 HY3: gene:1945166	X17342	PHYTOCHROME B	Red/far-red photoreceptor involved in the regulation of de-etiolation. Exists in two inter-convertible forms: Pr and Pfr (active). Involved in the light-promotion of seed germination and in the shade avoidance response.	[RNP+93]
PI	CS8062	pid-1 (Ler)	PISTILLATA	Gene:1944595	D30807	FLORAL HOMEOTIC PROTEIN PISTILLATA		[WJP+93]
RGA	CS3742	rga-2, gal-3 (Ler)	REPRESSOR OF GA1-3	Gene:1945306				[SCS98]
SEP1 (AGL2)			STRESS ENHANCED PROTEIN 1	Gene:3355554	AF133716	SEP1	Arabidopsis thaliana stress enhanced protein 1	[HA00]
SEP2 (AGL4)			STRESS ENHANCED PROTEIN 2	Gene:3354073	AF133717	SEP2	Arabidopsis thaliana stress enhanced protein 2	[HA00]
SEP3 (AGL9)			SEPALLAT A3	Gene:1944470	AF015552	SEP3	Arabidopsis thaliana MADS-box (AGL9) mRNA	[PDB+00]
SEX1 (SOP, SOP1)	CS3093	sex1-1 (Col)	STARCH EXCESS 1	Gene:1945356	AF312027	SEX1	Required for starch degradation.	[CLB98]
SHP1 (AGL1)	CS3841	shp1-1 (Ler)	Arabidopsis thaliana transcription factor (AGL1),	Gene:3355036	M55550	transcription factor		[YM91]
SHP2 (AGL5)	CS3845	shp2-1 (Ler)	Arabidopsis thaliana transcription factor (AGL5)	Gene:3354358	M55553	transcription factor		[YM91]

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SOC1 (AGL20)			AGAMOUS-LIKE 20	Gene:1944636	AY007726	MADS-BOX PROTEIN AGL20		[BKC+00]
SPT	CS275	spt-2	SPATULA	Gene:1945376	AF319540			[HAB+01]
SPY	CS8094	spy-5 (Ler)	SPINDLY	Gene:1944614	U62135	SPINDLY	Contains a tetratricopeptide repeat region, and a novel carboxy-terminal region. Mutations in both domains increase GA signal transduction. Putative N-acetyl glucosamine transferase that may glycosylate other molecules involved in GA signaling.	[JO93]
TFL1	CS3091 CS6235	tf11-2 (Ler) tf11-11 (Col)	TERMINAL FLOWER1	Gene:1944617	D86932	TERMINAL FLOWER 1	Controls inflorescence meristem identity. Involved in the floral initiation process. Ortholog of the Antirrhinum gene CENTRORADIALIS (CEN).	[BRV+97]
TOC1	CS3756	toc1 (C24)	TIMING OF CAB EXPRESSION 1	Gene:1945416	AF272039			[MCS+95]
UFO	CS6294	ufo-2 (Col)	UNUSUAL FLORAL ORGANS	Gene:1944627		UFO	Required for the proper identity of the floral meristem. Involved in establishing the whorled pattern of floral organs, in the control of specification of the floral meristem, and in the activation of APETALA3 and PISTILLATA.	[LM95]
VRN2			Vernalization 2	Gene:1945456				[CWD96]

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				TAIR	GenBank			
ZTL (LKP1, FKF1)			ZEITLUPE	Gene:3356323	ZTL:AF254 413	ZTL		[SSMK00]