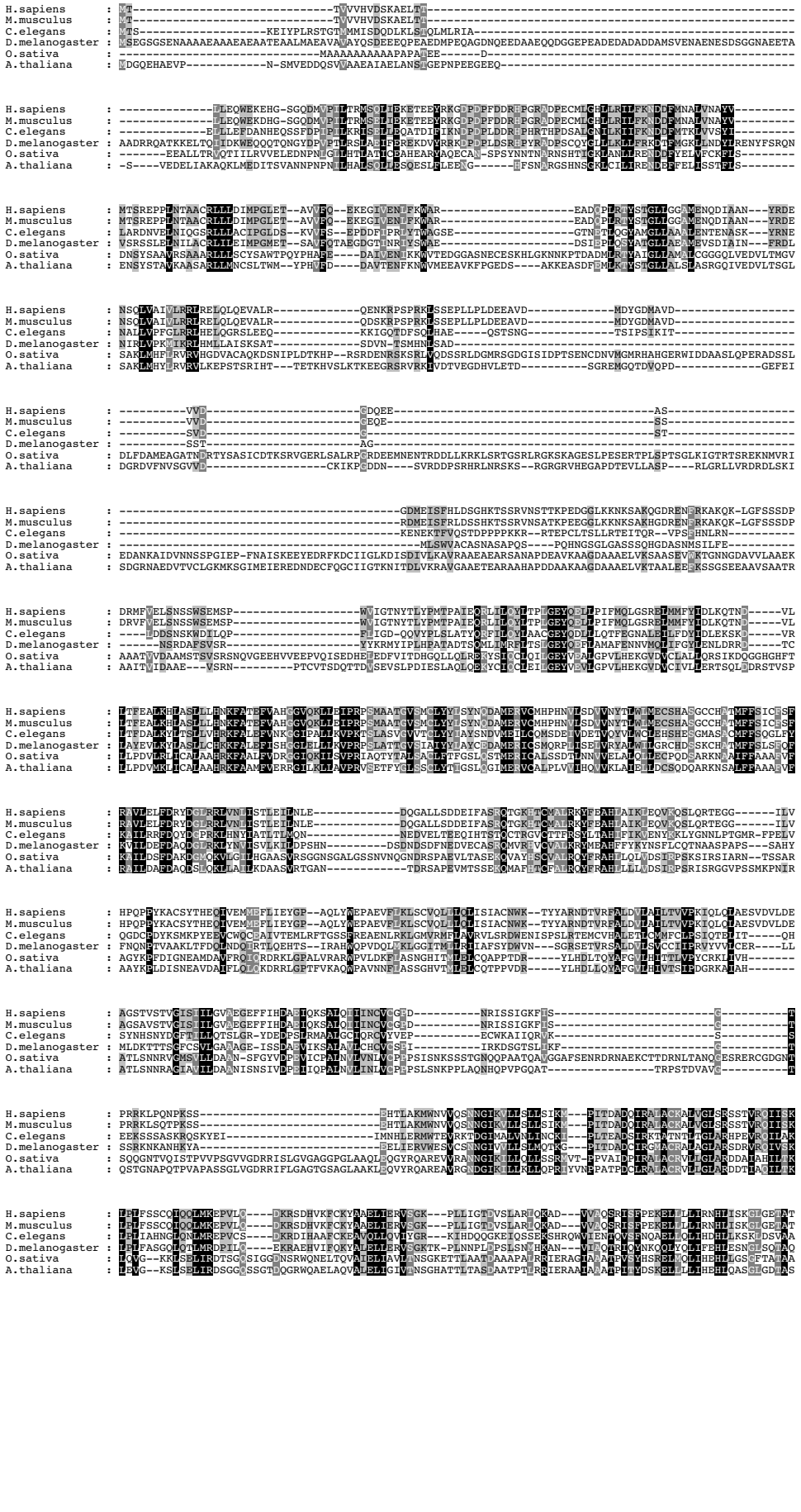
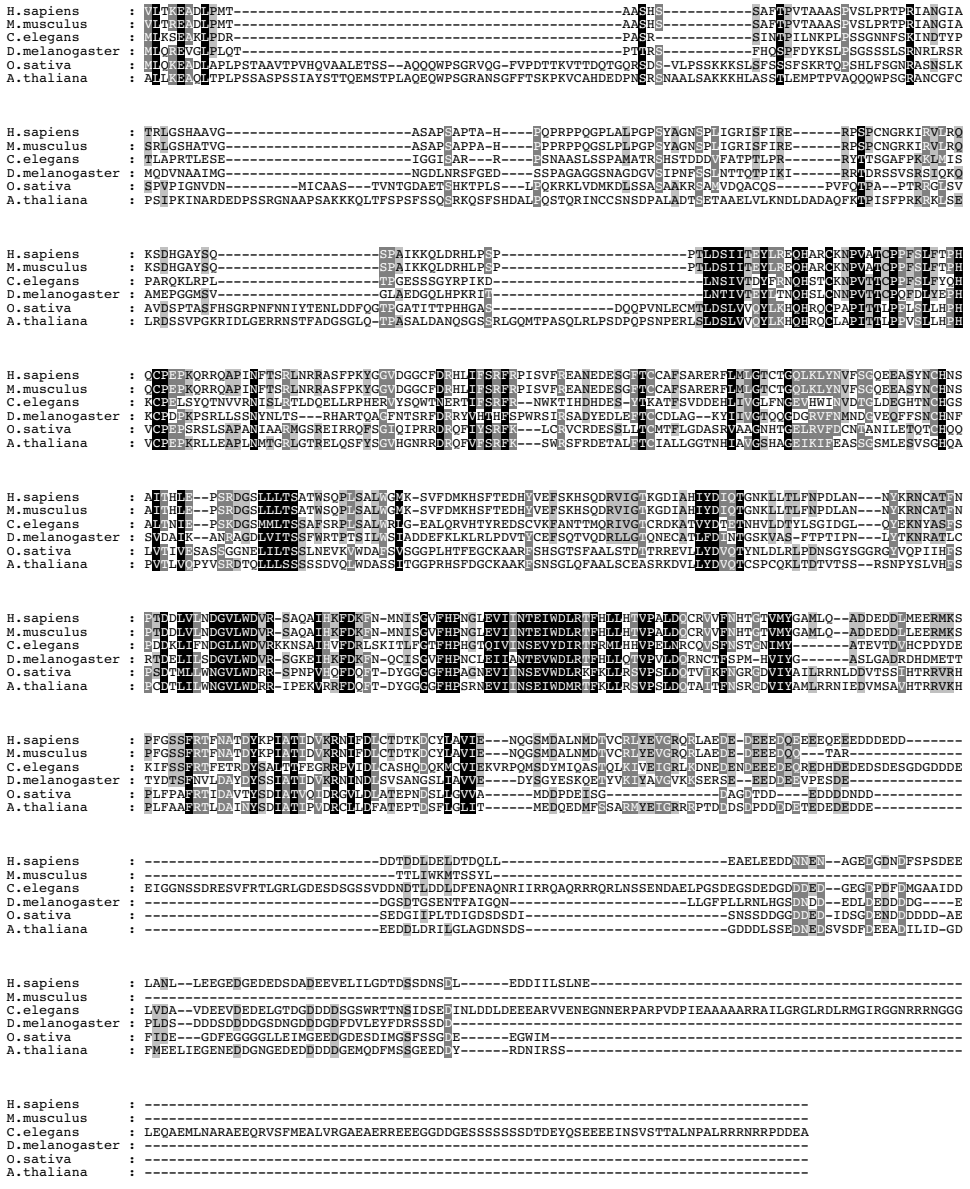
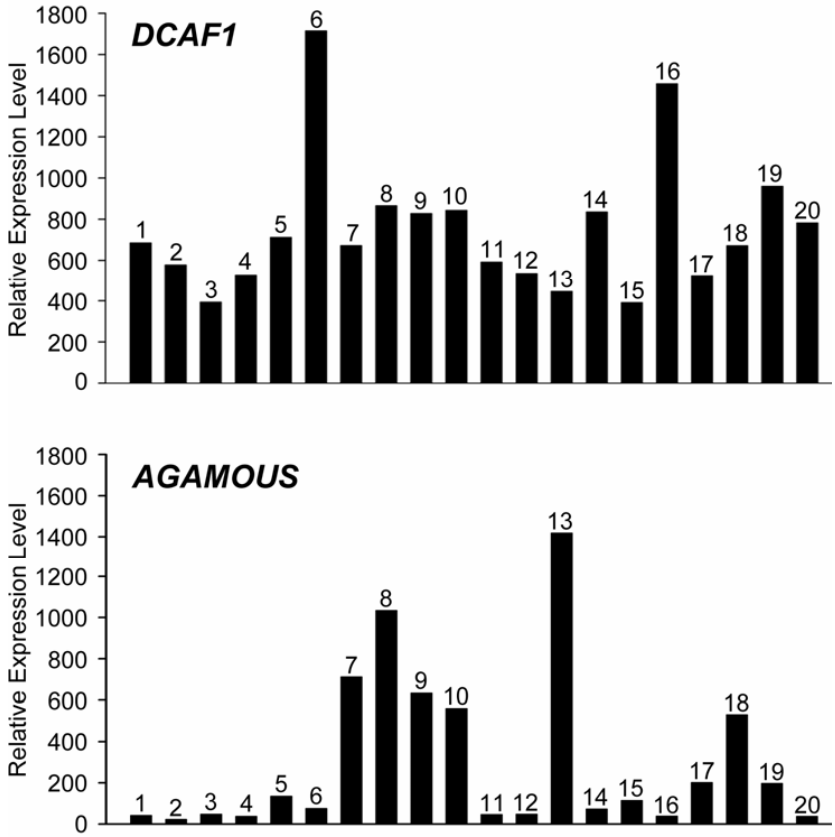
Supplemental Data. Zhang et al. (2008). *Arabidopsis* DDB1-CUL4 ASSOCIATED FACTOR 1 Forms a Nuclear E3 Ubiquitin Ligase with DDB1 and CUL4 that is Involved in Multiple Plant Developmental Processes.





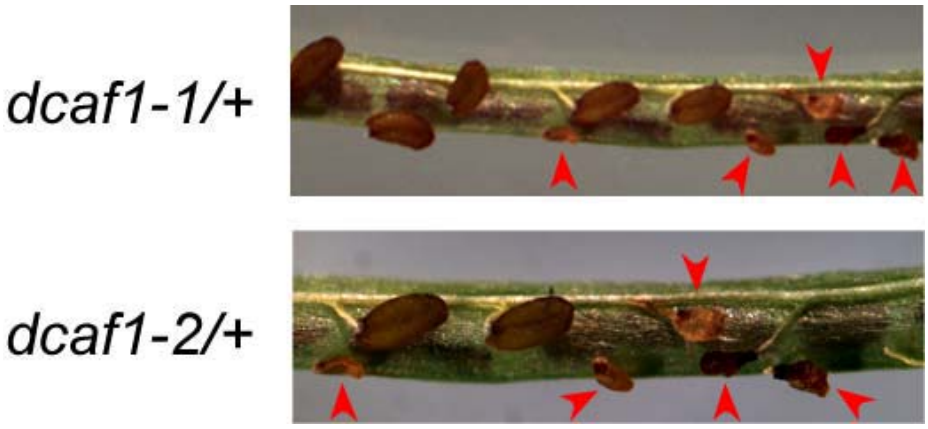
Supplemental Figure 1. Alignment of DCAF1 Homologues.

Sequence alignment of full-length DCAF1 homologues from various model organisms as labeled on the left. The shading mode indicates the level of conservation, with white letters in dark shading corresponding to high level of conservation (100%), white letters in dark gray shading corresponding to moderate level of conservation (80%), and black letters in light gray shading corresponding to low level of conservation (60%).

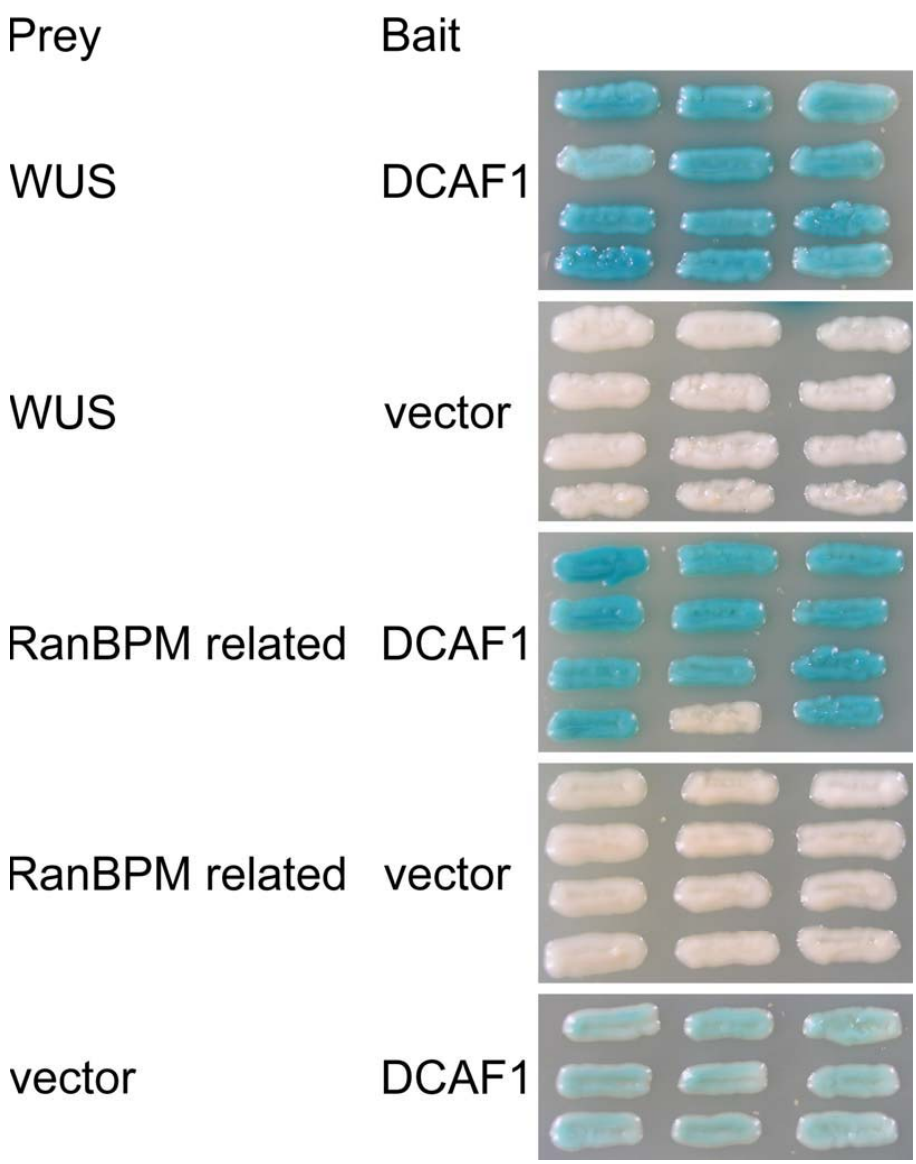


Supplemental Figure 2. Expression Profiles of the *DCAF1* Gene from a Prior Published Microarray Analysis.

Expression profiles of the *DCAF1* gene in different *Arabidopsis* organs derived from a genome expression profile study (Ma et al., 2005). The *AGAMOUS* gene is taken as a positive control (Ma et al., 2005). The relative expression levels of individual genes in each organ, shown by the black bars, represent the relative abundance to the *Arabidopsis* suspension cultured cell as a common control. Bar 1, cauline leaf; bar 2, cotyledon in white light; bar 3, rosette leaf; bar 4, cotyledon in dark; bar 5, hypocotyl in dark; bar 6, hypocotyl in white light; bar 7, pistil, one day after pollination; bar 8, pistil, one day before pollination; bar 9, silique, three days after pollination; bar 10, silique, eight days after pollination; bar 11, stem; bar 12, sepal; bar 13, stamen; bar 14, petal; bar 15, root in dark; bar 16, root in white light; bar 17, germinated seed; bar 18, flower; bar 19, inflorescence; bar 20, seedling.



Supplemental Figure 3. Matured Siliques from the *dcaf1* Heterozygotes. Stereomicroscopic images of siliques obtained from self-pollinated *dcaf1-1/+* and *dcaf1-2/+* parental plants. Red arrowheads indicate the abnormal shrunk, red seeds.



Supplemental Figure 4. Interaction Tests between Potential DCAF1 Target Proteins and DCAF1.

Test of potential DCAF1 target proteins using a yeast two-hybrid screen. The interaction results are shown as the development of blue color produced by β-galactosidase activities with X-gal as substrate in the *in vivo* plate assay.

Supplemental Table 1. Numbers of Putative DCAF Proteins and [WY][DE]x[RK] Motifs in *Arabidopsis* and Rice

	Arabidopsis	**Rice**
Protein Number	119	110
WDxR Motif Total Number	165	151
WDxR	108	102
WDxK	22	24
YDxR	24	15
YDxK	6	4
WExR	1	3
WExK	2	3
YExR	1	0
YExK	1	0

Supplemental Table 2. Putative DCAF Proteins in *Arabidopsis* and the Numbers of [WY][DE]x[RK] or DWD Motifs in Each Protein.

Gene ID	WDxR	WDxK	YDxR	YDxK	WExR	WExK	YExR	YExK	DWD
AT1G04510	1	1							
AT1G10580		1							
AT1G11160	1								1
AT1G15440	1	1							1
AT1G15470	1	1							
AT1G19485	1								
AT1G19750	1								1
AT1G20540	2								2
AT1G27840	1								1
AT1G29260	2								2
AT1G29320				1					1
AT1G36070	1								1
AT1G49040	2								2
AT1G49910	1		1						
AT1G52730	1								
AT1G53090			1						1
AT1G55680	1								1
AT1G61210	1								1
AT1G62020	1								
AT1G65030	1								1
AT1G69400	1		1						1
AT1G73720		1							1
AT1G76260	2								1
AT1G78070	1								1
AT1G80670	1								1
AT1G80710	2								1
AT2G01330				1					1
AT2G05720	2								2
AT2G16780	1								1
AT2G19430		1							1
AT2G19520	1								1
AT2G19540	1								1
AT2G20330	1								1
AT2G21390	1								
AT2G22040	2								
AT2G25420							1		
AT2G32950		1	1						2
AT2G33340	1	1							1
AT2G34260	1								
AT2G41500	2								
AT2G43770	3								2
AT2G43900	1								
AT2G46280	1	1							2
AT2G46290	1	1							2
AT2G46340			1						1
AT2G46560		1							1
AT2G47410	1								1
AT2G47790	2								
AT2G47990	1								1
AT3G05090	1								1
AT3G08850			1						1
AT3G09080				1					
AT3G10530	1								1
AT3G13340	1								1
AT3G15354			1						1
AT3G15610	1								
AT3G16650	2	1							2
AT3G18060				1					1
AT3G18140	2								
AT3G19590	1		1						1
AT3G20740		1							
AT3G27640	2								2
AT3G44600			1						
AT3G45620			1						1
AT3G49180		1							1
AT3G51930						1			
AT3G52030	1								
AT3G56990								1	

Supplemental Table 2. *Continued*

Gene ID	WDxR	WDxK	YDxR	YDxK	WExR	WExK	YExR	YExK	DWD
AT3G63460	2								
AT4G01860		1							1
AT4G02730	1	1				1			1
AT4G03020	2								2
AT4G04940		1							
AT4G05410	1								1
AT4G11110		1	1						1
AT4G15900	2	1							2
AT4G21130	1								1
AT4G21520	1								
AT4G28450			1						1
AT4G29380	3								1
AT4G29730	1								1
AT4G29830		1							1
AT4G29860	1								1
AT4G31160	2								
AT4G34280	1								1
AT4G34460	1		1						2
AT4G35050	1								1
AT4G35560		1							
AT4G38480			1						
AT5G01770			1						1
AT5G05970			1						
AT5G07590	1								
AT5G08390	1								1
AT5G10940			1						1
AT5G12920	2								1
AT5G13480	1		1						2
AT5G14050	1								1
AT5G14530	1								1
AT5G15550	2								2
AT5G17370			1						
AT5G18525	1								1
AT5G19920			1						
AT5G23430	1								1
AT5G23730	1		2						1
AT5G27080	1								
AT5G27570	1								1
AT5G49430	1								1
AT5G52250	1		2						1
AT5G52820					1				1
AT5G54520	1			1					1
AT5G56130	1								1
AT5G56190	1			1					1
AT5G58230	1								1
AT5G58760	1								1
AT5G60940	1								
AT5G63010	2								2
AT5G64730	1								1
AT5G66240	1								1
AT5G67320		1							1

Supplemental Table 3. Putative DCAF Proteins in Rice and the Numbers of [WY][DE]x[RK] or DWD Motifs in Each Protein.

Gene ID	WDxR	WDxK	YDxR	YDxK	WExR	WExK	YExR	YExK	DWD
Os01g03510				2					1
Os01g04870	1								1
Os01g08770	1								1
Os01g09020	1								
Os01g09252		1							1
Os01g13730			1						1
Os01g21940		1							1
Os01g28680	2								2
Os01g37120		1							1
Os01g39380	2								2
Os01g42260	1								
Os01g42270	1								
Os01g44394	1								1
Os01g51300	2								2
Os01g52640			1						1
Os01g57210		1							1
Os01g72220		1	1						2
Os01g85800	1								
Os01g86720	1		1						
Os02g02380	1		1						1
Os02g11060	1								
Os02g14790	3								2
Os02g18820		1							1
Os02g20430	1								1
Os02g21490	1			1					1
Os02g37856	2								2
Os02g48964	1								
Os02g49090	1								1
Os02g53140		1							1
Os02g55340	3								1
Os02g61760	1								
Os03g02440	1								1
Os03g08830			1		1				1
Os03g17780			1						
Os03g21990	1	1							1
Os03g23909	2								2
Os03g26870	1								1
Os03g27970		2							1
Os03g33580	1		1						1
Os03g42770	1								1
Os03g43890	1	1							2
Os03g46650	1								1
Os03g47780	1					1			1
Os03g48090	1								1
Os03g49200	2		1						1
Os03g50340	1								
Os03g50350	1								
Os03g51550					1				1
Os03g52470	1								
Os03g53510	1								1
Os03g73800	1								
Os04g42880	2								2
Os04g50660	1								1
Os04g52870	1								
Os04g58130	1								1
Os04g69120	2								
Os05g05210	2		1						3
Os05g16660	1								1
Os05g33710	2								2
Os05g36350		1							
Os05g46570	1								1
Os05g49590			1						1
Os06g04040	1								
Os06g07540	1								1
Os06g12840			1						

Supplemental Table 3. *Continued*

Gene ID	WDxR	WDxK	YDxR	YDxK	WExR	WExK	YExR	YExK	DWD
Os06g19660	1								1
Os06g39760	1								
Os06g43690		1							
Os06g44370	3								3
Os06g50880			1						1
Os07g12320	1								1
Os07g14830					1				1
Os07g22220		1							1
Os07g22534	2								1
Os07g38430	1	1							2
Os07g40030	1								1
Os07g40930	2								2
Os07g41190	1								1
Os07g45440	1								
Os07g46370	2	1							
Os07g46620	1								1
Os08g04270						1			1
Os08g18150	1								
Os08g18880	1								
Os08g21660	1								1
Os08g31560	1								1
Os08g38880	1								1
Os08g41900	1								
Os08g44010	2								
Os09g04110	1								
Os09g06560		1							1
Os09g09470			1						
Os09g12550		1							1
Os09g12710	1	1							2
Os09g19900	1								1
Os09g36900	1								1
Os10g01540	1	1							1
Os10g32710	1								1
Os10g32880	1	1							1
Os10g35200	1								1
Os10g39760			1						
Os11g03990	1								1
Os11g10640		1							1
Os11g18240	1								
Os11g38170	1	1							1
Os11g43890				1					1
Os11g61070		1							
Os12g06810	1					1			2
Os12g19590	2								
Os12g42150	1								1

Supplemental Methods

Microarray Analysis

The expression profiles of the *DCAF1* and *AGAMOUS* genes in *Arabidopsis* were extracted from a recent whole-genome expression profiling study using a 70-mer oligonucleotide microarray (Ma et al., 2005). Details of the materials and methods can be found in the original publication. The 70-mer sequences whose expression data are reported in this article are as follows: DCAF1, 5'-AAACATCGAGGACGTTATGTCAGCGGTTCACACACGCCGTGTGAAACATCCCTTGTTTGCTGCTTTCCGC-3'; AGAMOUS, 5'-AACAGTGTAAAAGGGACTATTGAGAGGTACAAGAAGGCAATATCGGACAATTCTAACACCGGATCGGTGG-3'. The 12 distinct negative control oligos, with no match in the genome sequence, were printed 16 times at well-spaced location on each slide to avoid potential errors caused by the spatial effects. Except for petal (two replicates) and pistil one day after pollination (four replicates), there were three biological replicates used for all organ types, with one quality data set from each replicate. The *Arabidopsis* suspension cultured cells were included as a common control to estimate the relative expression for each transcript in different organs. The relative abundance of individual genes was referred as the relative expression level in each organ.