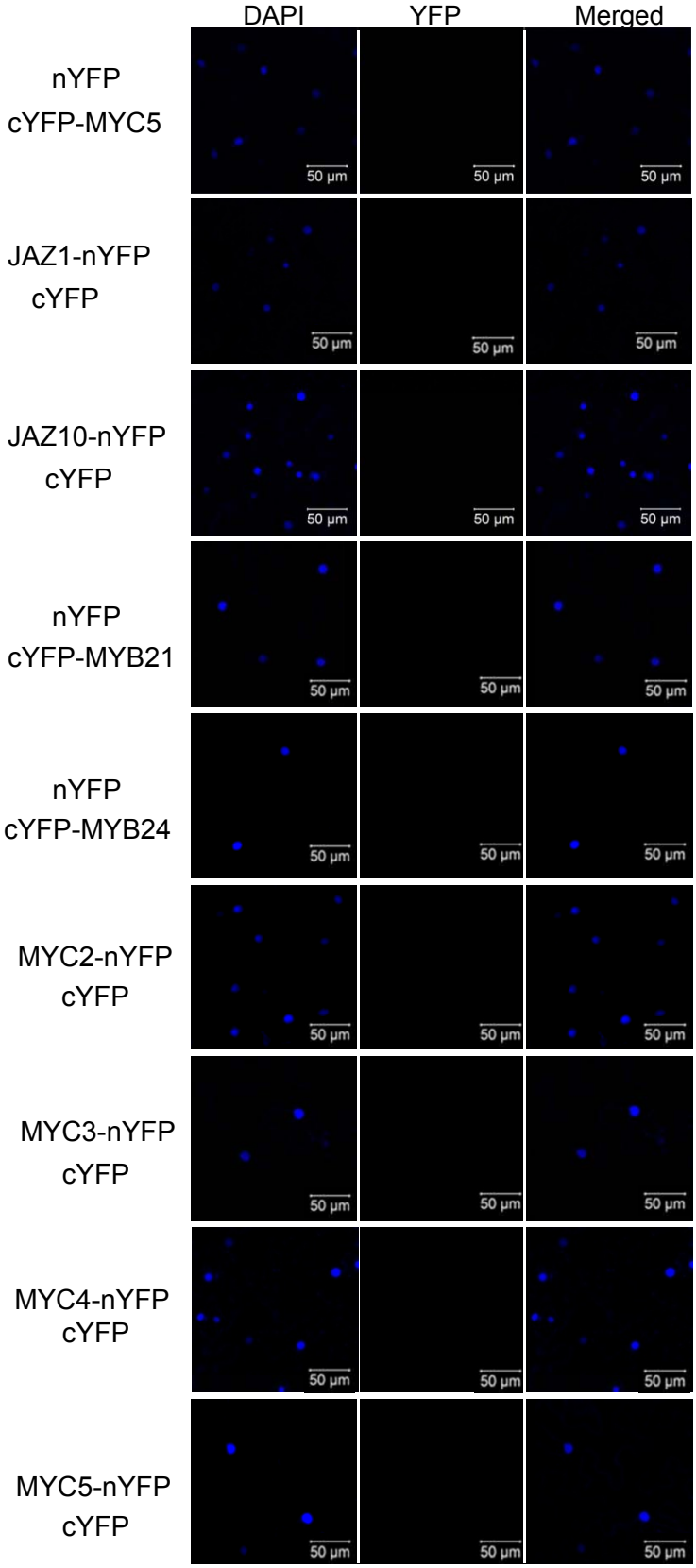
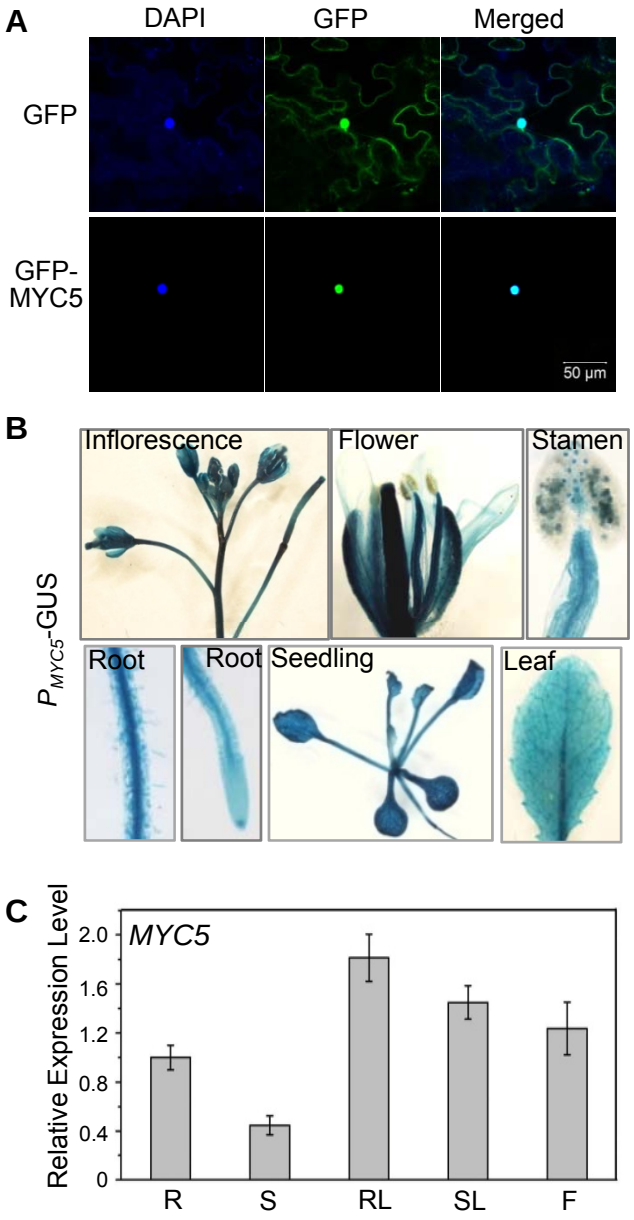


Supplemental Figure 1. Negative Controls for the BiFC Experiments.

No signal of YFP fluorescence was detected 50 hours after co-expression of JAZ1/JAZ10/MYC2/MYC3/MYC4/MYC5-nYFP with cYFP, or nYFP with cYFP-MYC5/MYB21/MYB24 in leaves of *N. benthamiana.* The nuclei were indicated by DAPI staining.

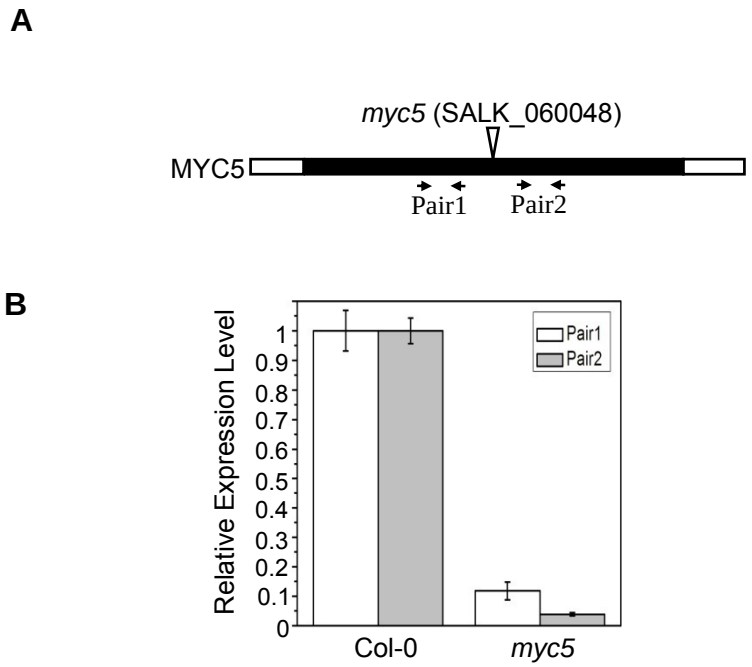


Supplemental Figure 2. Subcellular Localization and Expression Pattern of MYC5.

(A) Subcellular localization of MYC5 in epidermal cells of *N. benthamiana* leaves. GFP fluorescence was detected 50 hours after infiltration. The nuclei were indicated by DAPI staining.

(B) The promoter of *MYC5* was fused with *GUS* gene to generate *Arabidopsis* transgenic plants (P_{MYC5}-*GUS*). Histochemical GUS activity was detected in various tissues of transgenic seedlings.

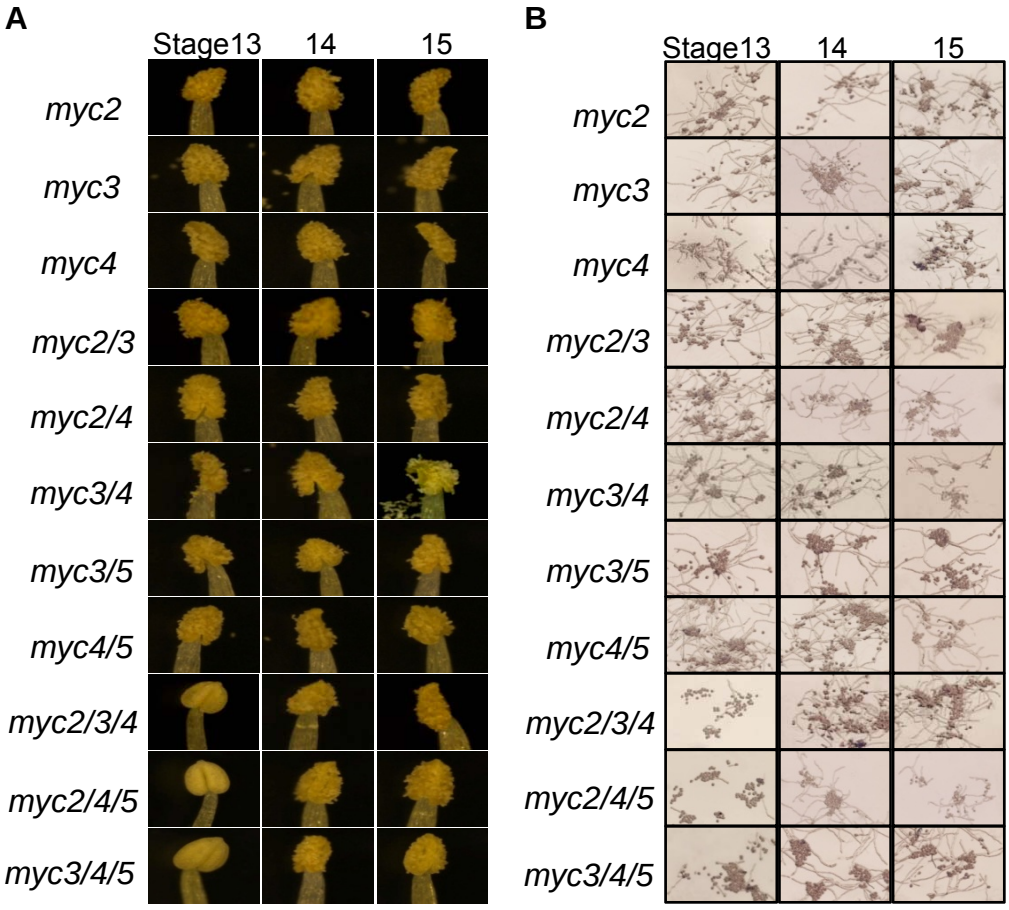
(C) Quantitative real-time PCR analysis for *MYC5* in root (R), stem (S), rosette leaf (RL), stem leaf (SL) and flower (F). *ACTIN8* was used as the internal control. Values are means (±SE) from three biological replicates.



Supplemental Figure 3. RT-qPCR Analysis of MYC5 expression in the T-DNA Insertion Mutant.

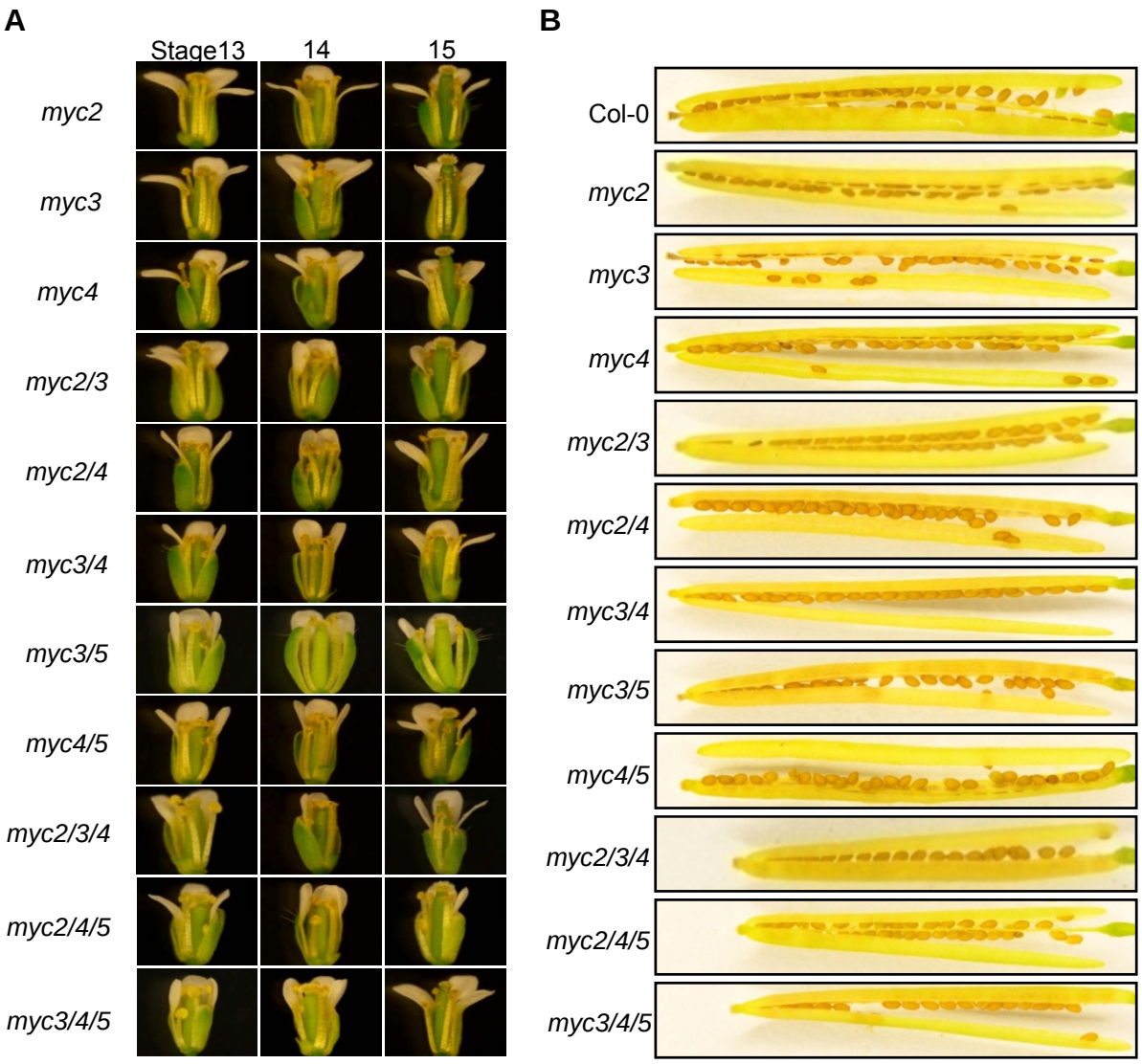
(A) Schematic diagrams of T-DNA insertion sites in *MYC5* (at5g46830). White box, UTR; black box, exon; white triangle, T-DNA insertion site. Pair1 and Pair2, indicated by arrows, are the primer pairs for analyzing expression of *MYC5* in (B).

(B) Quantitative real-time PCR analysis for *MYC5* in Col-0 wild-type and the T-DNA insertion mutant Salk_060048 using primer pairs indicated by arrow pairs in (A). *ACTIN8* was used as the internal control. Values are means (±SE) from three biological replicates.



Supplemental Figure 4. The bHLH Subgroup IIIe Factors Function Redundantly to Regulate Anther Dehiscence and Germinating Ability of Pollen.

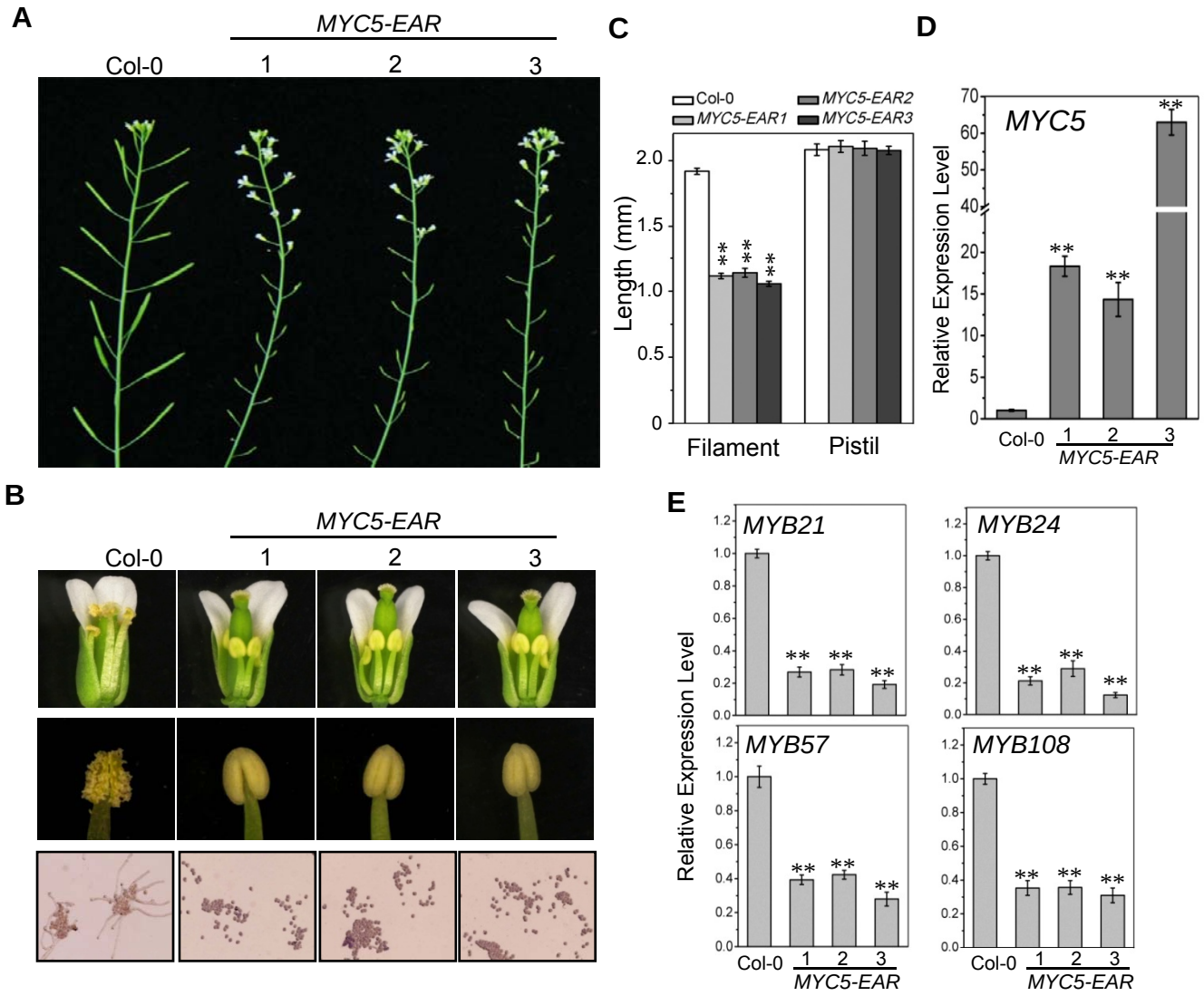
Comparison of anther (A) and in vitro germination of pollen grains from anther (B) at floral stage 13, 14 or 15 in *myc2*, *myc3*, *myc4*, *myc2 myc3* (*myc2/3*), *myc2 myc4* (*myc2/4*), *myc3 myc4* (*myc3/4*), *myc3 myc5* (*myc3/5*), *myc4 myc5* (*myc4/5*), *myc2 myc3 myc4* (*myc2/3/4*), *myc2 myc4 myc5* (*myc2/4/5*) and *myc3 myc4 myc5* (*myc3/4/5*).



Supplemental Figure 5. The bHLH Subgroup IIIe Factors Function Redundantly to Regulate Filament Elongation and Seed Set.

(A) Comparison of flowers at floral stage 13, 14 or 15 in *myc2*, *myc3*, *myc4*, *myc2 myc3* (*myc2/3*), *myc2 myc4* (*myc2/4*), *myc3 myc4* (*myc3/4*), *myc3 myc5* (*myc3/5*), *myc4 myc5* (*myc4/5*), *myc2 myc3 myc4* (*myc2/3/4*), *myc2 myc4 myc5* (*myc2/4/5*) and *myc3 myc4 myc5* (*myc3/4/5*).

(B) Siliques from the indicated genotypes.



Supplemental Figure 6.

Supplemental Figure 6. Overexpression of MYC5-EAR Leads to Male Sterility.

(A) Main inflorescences in Col-0 wild-type and three *Arabidopsis* lines transgenic for EAR motif-fused MYC5 (*MYC5-EAR1*, *MYC5-EAR2* and *MYC5-EAR3*).

(B) Comparison of flowers (top), anthers (middle), and germination of pollen grains (bottom) from the flowers at floral stage 13 of Col-0 and the three *MYC5-EAR* lines.

(C) Filament length and pistil length at floral stage 13 in the indicated genotypes. Values are means (±SE) from three biological replicates. Asterisks represent Student's *t*-test significance compared with Col-0 wild-type (**P < 0.01).

(D) Quantitative real-time PCR analysis for *MYC5* in 3-week-old plants of the indicated genotypes using *ACTIN8* as the internal control. Values are means (±SE) from three biological replicates. Asterisks represent Student's *t*-test significance compared with Col-0 wild-type (**P < 0.01).

(E) Quantitative real-time PCR analysis for *MYB21*, *MYB24*, *MYB57* and *MYB108* in young flower buds of the indicated genotypes using *ACTIN8* as the internal control. Values are means (±SE) from three biological replicates. Asterisks represent Student's *t*-test significance compared with Col-0 wild-type (**P < 0.01).

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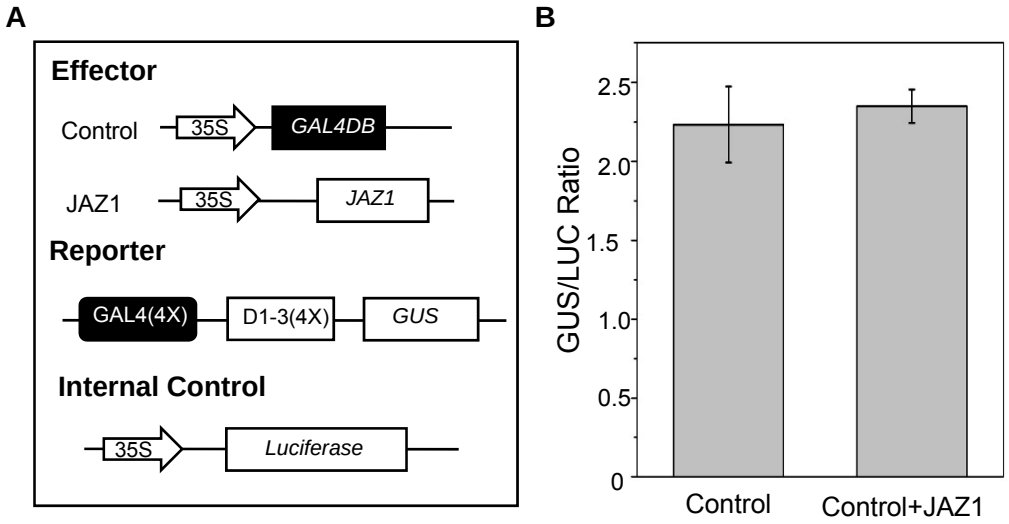
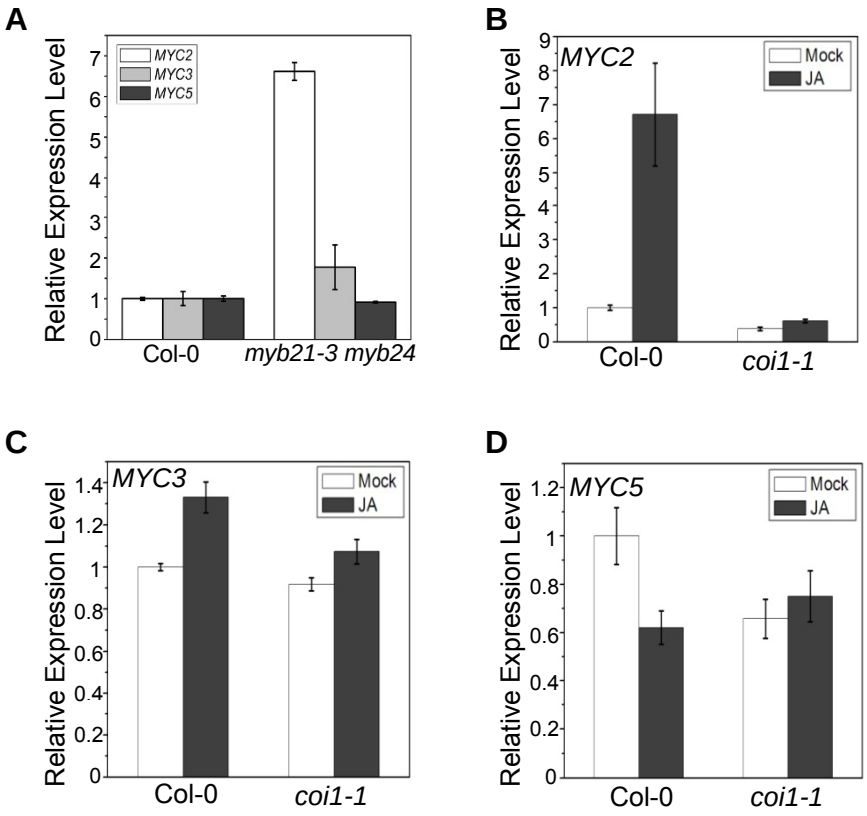


Supplemental Figure 7. JAZ1 Cannot Attenuate the Basal Activity of GAL4DB.

(A) The schematic diagrams show the constructs used in the transient expression assays in (B).

(B) Transient expression assays show that JAZ1 cannot inhibit the basal activity of GAL4 DNA Bind domain (GAL4DB). Values are means (±SE) from three biological replicates.



Supplemental Figure 8. Expression Level of *MYC2, MYC3* and *MYC5* in *myb21-3 myb24* and *coi1-1* Mutant.

(A) Quantitative real-time PCR analysis for *MYC2*, *MYC3* and *MYC5* in young flower buds of Col-0 wild-type and the *myb21-3 myb24* mutant using *ACTIN8* as the internal control. Values are means (±SE) from three biological replicates.

(B-D) Quantitative real-time PCR analysis for *MYC2* (B), *MYC3* (C) and *MYC5* (D) in the young flower buds of Col-0 and *coi1-1* treated without (Mock) or with methyl-jasmonate (JA) for 4 hours. *ACTIN8* was used as the internal control. Values are means (±SE) from three biological replicates.

Supplemental Table 1. Primers Used for Vector Construction.

JAZ1 pLexA	Forward-EcoRI	cccgaattcatgtcgagttctatggaatg
JAZ1 pLexA	Reverse-SalI	aaaagtcgactcatatttcagctgctaaacc
JAZ2 pLexA	Forward-EcoRI	cccgaattcatgtcgagtttttctgccgagtg
JAZ2 pLexA	Reverse-XhoI	accgctcgagttaccgtgaactgagccaagctg
JAZ3 pLexA	Forward-EcoRI	ggggaattcatggagagagattttctcgggttg
JAZ3 pLexA	Reverse-XhoI	cccgctcgagttaggttgcagagctgagagaag
JAZ4 pLexA	Forward-EcoRI	ggggaattc atggagagagattttctcgggctg
JAZ4 pLexA	Reverse-XhoI	cccgctcgagttagtgcagatgatgagctggag
JAZ5 pLexA	Forward-EcoRI	cccgaattcatgtcgtcgagcaatgaaaatgc
JAZ5 pLexA	Reverse-XhoI	cccgctcgagctatagccttagatcgagatc
JAZ6 pLexA	Forward-EcoRI	ggggaattcatgtcaacgggacaagcgccggag
JAZ6 pLexA	Reverse- XhoI	cccgctcgagctaaagcttgagttcaaggtt
JAZ7 pLexA	Forward-EcoRI	cccgaattcatgatcatcatcatcaaaaactg
JAZ7 pLexA	Reverse-XhoI	accgctcgagctatcggtaacggtggtaagg
JAZ8 pLexA	Forward-NcoI	ccccccatggatgaagctacagcaaaattgtg
JAZ8 pLexA	Reverse-XhoI	gggctcgagttatcgtcgtgaatggtacggtg
JAZ9 pLexA	Forward-EcoRI	ggggaattc atggaaagagattttctgggtttg
JAZ9 pLexA	Reverse-XhoI	ccgctcgagttatgtaggagaagtagaagag
JAZ10 pLexA	Forward-EcoRI	ggggaattcatgtcgaaagctaccatagaactcg
JAZ10 pLexA	Reverse-SalI	acgcgtcgac ttaggccgatgtcggatagtaag
JAZ11 pLexA	Forward-EcoRI	ggggaattcatggctgaggtaaacggagatttc
JAZ11 pLexA	Reverse-SalI	aaaagtcgactcatgtcacaatggggctgg
JAZ12 pLexA	Forward-BamHI	cccggatccatgactaaggtgaaagatgagcc
JAZ12 pLexA	Reverse-SalI	acgcgtcgacctaagcagttggaaattcctcc
JAZ11NT pLexA	Forward-EcoRI	ggggaattcatggctgaggtaaacggagatttc
JAZ11NT pLexA	Reverse-SalI	aaaagtcgactcatgctgtcgatacgcaagctac
JAZ11CT pLexA	Forward-EcoRI	ggggaattcaaagccactgagacaattaatt
JAZ11CT pLexA	Reverse-SalI	aaaagtcgactcatgtcacaatggggctgg

MYB21NT pLexA	Forward-MfeI	cgccaattgatggagaaaagaggaggaggaag
MYB21NT pLexA	Reverse-XhoI	cccgctcgagtcacgaatagttaccatagttg
MYB24NT pLexA	Forward-EcoRI	ggggaattcatggagaaaagagaaagtagtg
MYB24NT pLexA	Reverse-XhoI	ccgctcgagtcaataattaccataattaagc
MYC5 pB42AD	Forward-MfeI	ccccaattgatgattaataccgacgataactta
MYC5 pB42AD	Reverse-SalI	acgcgtcgactcagctaattttcgacatcaacaa
MYC5NT pB42AD	Forward-MfeI	cgccaattgatgattaataccgacgataactta
MYC5NT pB42AD	Reverse-SalI	aaaagtcgactcacgggttaccggttacagtacttg
MYC5CT pB42AD	Forward- EcoRI	ggggaattcatgccggttttggttaccggttcggatc
MYC5CT pB42AD	Reverse-XhoI	ccgctcgagtcagctaattttcgacatcaacaa
JAZ1 nYFP	Forward	cggacaagtttgtacaaaaaagcaggctccatgtcgagt tctatggaatgttc
JAZ1 nYFP	Reverse	cggaccactttgtacaagaaagctgggtctatttcagctg ctaaaccgag
JAZ10-nYFP	Forward	cggacaagtttgtacaaaaaagcaggctccatgtcgaaa gctaccatagaac
JAZ10-nYFP	Reverse	cggaccactttgtacaagaaagctgggtcggccgatgtc ggatagtaag
MYC2-nYFP	Forward	cggacaagtttgtacaaaaaagcaggctccatgactgatt accggctacaaccaacg
MYC2-nYFP	Reverse	cggaccactttgtacaagaaagctgggtcaccgatttttg

		aaatcaaacttg
MYC3-nYFP	Forward	cggacaagtttgtacaaaaaagcaggctccatgaacgg cacaacatcatcaatcaac
MYC3-nYFP	Reverse	cggaccactttgtacaagaaagctgggtcatagttttctcc gactttcgtc
MYC4-nYFP	Forward	cggacaagtttgtacaaaaaagcaggctccatgtctccg acgaatgttcaagtaac
MYC4-nYFP	Reverse	cggaccactttgtacaagaaagctgggtctggacattctc caactttctccg
MYC5-nYFP	Forward	cggacaagtttgtacaaaaaagcaggctccatgattaata ccgacgataacttattg
MYC5-nYFP	Reverse	cggaccactttgtacaagaaagctgggtcgctaattttcg acatcaacaaatc
cYFP-MYC5	Forward	cggacaagtttgtacaaaaaagcaggctccatgattaata ccgacgataactta
cYFP- MYC5	Reverse	cggaccactttgtacaagaaagctgggtctgctaattttcg acatcaacaa
cYFP-MYB21	Forward	cggacaagtttgtacaaaaaagcaggctccatggagaa aagaggaggaggaag
cYFP-MYB21	Reverse	cggaccactttgtacaagaaagctgggtctcaattaccatt caataaatg
cYFP-MYB24	Forward	cggacaagtttgtacaaaaaagcaggctccatggagaa aagagaaagtagtg
cYFP-MYB24	Reverse	cggaccactttgtacaagaaagctgggtcttaattaccatt atatatattc
GFP-MYC5	Forward-MfeI	cgccaattgatgattaataccgacgataactta
GFP-MYC5	Reverse-HindIII	agaaagctttcagctaattttcgacatcaacaaatc
pMYC5::GUS	Forward-HindIII	agaaagcttcaccattacacataaaaactaa
pMYC5::GUS	Reverse-SalI	acgcgtcgaccgttgccggagtattagaagtcgtctc
DB MYC2	Forward- SmaI	tcccccggggatgactgattaccggctacaaccaacg
DB MYC2	Reverse- SmaI	tcccccgggttaaccgatttttgaaatcaaacttg

DB MYC3	Forward- SmaI	tcccccggggatgaacggcacaacatcatcaatcaac
DB MYC3	Reverse- XhoIR	acgcgtcgactcaatagttttctccgactttcgtc
DB MYC4	Forward- SmaI	tcccccggggatgtctccgacgaatgttcaagtaac
DB MYC4	Reverse- XhoIR	acgcgtcgactcatggacattctccaactttctccg
DB MYC5	forward-SmaI	tcccccggggatgattaataccgacgataacttattg
DB MYC5	reverse- SalI	acgcgtcgactcagctaattttcgacatcaacaaatc
DB MYB21	forward-SmaI	agacccggggatggagaaaagaggaggagg
DB MYB21	reverse- SalI	acgcgtcgactcaattaccattcaataaatgc
DB MYB24	forward-SmaI	agacccggggatggagaaaagagaaagtagtg
DB MYB24	reverse- SalI	acgcgtcgacttaattaccattatatatattcatg
JAZ1-pGreenII 62-SK	Forward-SacI	atcgagctcatgtcgagttctatggaatg
JAZ1-pGreenII 62-SK	Reverse-SalI	agagtcgactcatatttcagctgctaaac
MYC3 Overexpresion	Forward-SalI	acgcgtcgacatgaacggcacaacatcatcaatcaac
MYC3 Overexpresion	Reverse-SpeI	cggactagttcaatagttttctccgactttcgtcatc
MYC5 Overexpresion	Forward-SalI	acgcgtcgacatgattaataccgacgataacttattg
MYC5 Overexpresion	Reverse-SpeI	cggactagttcagctaattttcgacatcaacaaatc
MYC5-EAR	Forward-SalI	acgcgtcgacatgattaataccgacgataacttattg
MYC5-EAR	Reverse-SpeI	cggactagttcaagcgaatccaagacgaagttccaagtc taggtctagtccgctaattttcgacatcaacaaatccc
myc-MYB21	Forward-SmaI	agacccgggatggagaaaagaggaggaggaag
myc-MYB21	Reverse-SacI	atcgagctctcaattaccattcaataaatgca
flag-MYC5	Forward-SalI	acgcgtcgacatgattaataccgacgataacttattg
flag-MYC5	Reverse-SpeI	cggactagttcagctaattttcgacatcaacaaatc

Supplemental Table 2. Primers for Quantitative Real-time PCR Analysis.

MYC5-Realtime PCR	Forward	aacgtgaagatggggttgag
MYC5-Realtime PCR	Reverse	tcgacatcaacaaatccctaag
MYC2-Realtime PCR	Forward	tccgagtccggttcattct
MYC2-Realtime PCR	Reverse	tctcgggagaaagtgttattgaa
MYC3-Realtime PCR	Forward	aggttgggatgtgatgatacg
MYC3-Realtime PCR	Reverse	aacctagcaccgggatgat
MYC4-Realtime PCR	Forward	aactctttaatctccggtggtg
MYC4-Realtime PCR	Reverse	tgtaacttcttcatctccagcttc
MYC5-Realtime PCR (Pair1-F for Salk_060048)	Forward	tgacggatatggagtggttctt
MYC5-Realtime PCR (Pair1-R for Salk_060048)	Reverse	cccgtaaatcagatccgaaccgg
MYC5-Realtime PCR (Pair2-F for Salk_060048)	Forward	catgcggcgatgtactgagtt
MYC5-Realtime PCR (Pair2-R for Salk_060048)	Reverse	tgagggacgacgttttgaatct
MYB21-Realtime PCR	Forward	gctaagtggggaaacaggtg
MYB21-Realtime PCR	Reverse	cgattgcttgatgtatttttgaa
MYB24-Realtime PCR	Forward	tggaactctctcgccaaatc
MYB24-Realtime PCR	Reverse	gcacatcaggtcggaggtag
MYB57-Realtime PCR	Forward	tgctaagcttggaaacaggtg
MYB57-Realtime PCR	Reverse	tgacactttcatgtgtctctgaatc
MYB108-Realtime PCR	Forward	ttttaagctcatgaattacattgctac

MYB108-Realtime PCR	Reverse	tttaccggtgcgttggag
Actin8-Realtime PCR	Forward	tcagcactttccagcagatg
Actin8-Realtime PCR	Reverse	ctgtggacaatgcctggac