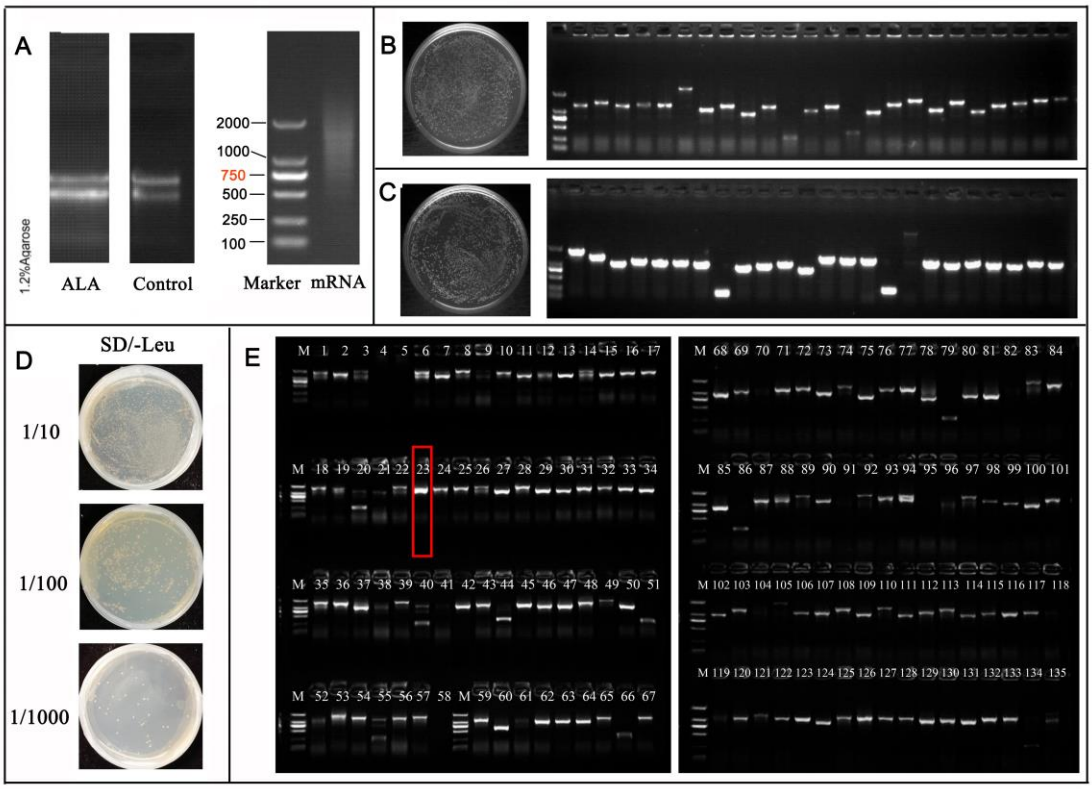

Figure S1. Construction of apple calli cDNA library, screening of yeast one-hybrid cDNA library and PCR detection of positive colonies. (A) Agarose gel electrophoresis analysis of total RNA and mRNA extracted from apple calli. Total RNA electrophoresis map, marker, mRNA electrophoresis map. (B) Identification of cDNA primary library capacity and agarose gel electrophoresis analysis of inserted fragment sizes. (C) Identification of cDNA secondary library capacity and agarose gel electrophoresis analysis of inserted fragment size. (D) The screening of yeast one-hybrid cDNA library. 1/10, 1/100, and 1/1000 respectively represent 10 times, 100 times, and 1000 times diluted conversion. (E) Yeast colony PCR detection of yeast from figure D. MdSCL8 is marked with red rectangle.

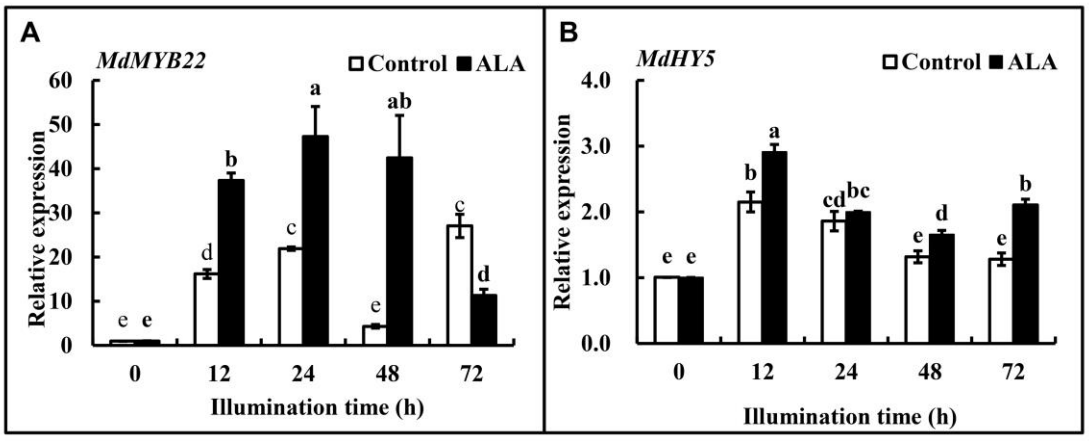

Figure S2. Effect of ALA on *MdMYB22* and *MdHY5* gene expression in calli. The calli were treated with 50 mg L^{-1} ALA or deionized water (Control) for 3 h under dark and then cultured in solid MS medium under light of 100 μmol $m^{-2}s^{-1}$ photon flux density at 22℃ for 72 h. The values of (A, B) were performed 3 biological replicates. Error bars represent standard errors. Three biological replicates were performed for each experiment. The same lowercase letters indicate no significant differences at $P \leq 0.05$.

Table S1. Primer sequences used in the study

	Primer name	Froward primer5'-3'	Reverse primer5'-3'
CDS amplification	*121-SCL8*	GAGAACACGGGGGACTCTAGAATG	GGACTGACCACCCGGGGATCCACG
		CAATCGGGAGGCTTCAACG	CCAAGCGGAAGCGAC
	1300-SCL8	GAGAACACGGGGGACTCTAGAATG	GCCCTTGCTCACCATGGATCCACGC
		CAATCGGGAGGCTTC	CAAGCGGAAGCGAC
	0800-MdFLS1	TCGACGGTATCGATAAGCTTTAGGT	GCTCTAGAACTAGTGGATCCTTCCA
		GTGAAATTCTGTCTTTAGGACA	CCGCTCTCATCTCTCTT
	proMdFLS1	GAGAACACGGGGGACTCTAGATAG	GGACTGACCACCCGGGGATCCTTCC
		GTGTGAAATTCTGTCTTTAGG	ACCGCTCTCATCTCTC
	MdSCL8(i)	GGGGACAAGTTTGTACAAAAAAGC	GGGGACCACTTTGTACAAGAAAGCT
		AGGCTCCCACCAGCAGAACCACTAC	GGGTGCTCTTGCAGCGTGTTACTGA
	MdHY5(i)	GGGGACAAGTTTGTACAAAAAAGC	GGGGACCACTTTGTACAAGAAAGCT
		AGGCTTCTTCGAGCTCTGCATTCCA	GGGTAACAACCTCTTCAGCCGCTT
	MdMYB22(i)	GGGGACAAGTTTGTACAAAAAAGC	GGGGACCACTTTGTACAAGAAAGCT
		AGGCTTGAAATTAGCACCAGTGTCC	GGGTGGGACCTCCATTAGTAGCACG
qRT-PCR	*MdUBQ*	CTCCGTGGTGGTTTTTAAGT	GGAGGCAGAAACAGTACCAT
	MdFLS1	AAAATGGGAGTGGAGTCTGTG	TTATGACCTCGCTGGGAATGT
	MdSCL8	CGTGGAAAGATGTGAAGTGTT	GCGGCTTATCCAACCAAA
	MdHY5	GGAAGAGTGCCGGAAATCG	CTCCCTTGCTTGCTGTGCT
	MdMYB22	GTAATAGGTGGTCTTTGATAGCG	GGGTTTGGTGGTAGAGTAGGT
Y2H/ Y1H	*BD-MdHY5*	ATGGCCATGGAGGCCGAATTCATGC	CCGCTGCAGGTCGACGGATCCATCC
		AAGAGCAGGCGACG	GCATTTGCACCACCA
	AD-MdMYB22	GCCATGGAGGCCAGTGAATTCATGG	CAGCTCGAGCTCGATGGATCCCTGG
		GGAGGGCGCCGTGC	ATGCCGTAGTAAGTCGTCG
	AD-MdHY5	GCCATGGAGGCCAGTGAATTCATGC	CAGCTCGAGCTCGATGGATCCATCC
		AAGAGCAGGCGACG	GCATTTGCACCACCA
	BD-MdSCL8	ATGGCCATGGAGGCCGAATTCATGC	CCGCTGCAGGTCGACGGATCCACGC
		AATCGGGAGGCTTCA	CAAGCGGAAGCGAC
	AD-MdSCL8	GTGGGCATCGATACGGGATCCATGC	ACGATTCATCTGCAGCTCGAGACGC
		AATCGGGAGGCTTCA	CAAGCGGAAGCGAC
	proMdFLS-pAbAi	AAATGATGAATTGAAAAGCTTTAGG	ATACAGAGCACATGCCTCGAGTTCC
		TGTGAAATTCTGTCTTTAGGACA	ACCGCTCTCATCTCTCTT
BIFC	*YNE-MdHY5*	GAGAACACGGGGGACTCTAGAATG	CTCCATCCCGGGAGCGGTACCATCC
		CAAGAGCAGGCGACG	GCATTTGCACCACCA
	YNE-MdSCL8	GAGAACACGGGGGACTCTAGAATG	CTCCATCCCGGGAGCGGTACCACGC
		CAATCGGGAGGCTTCA	CAAGCGGAAGCGAC

	YCE-MdMYB22	GAGAACACGGGGGACTCTAGAATG	GTACATCCCGGGAGCGGTACCCTGG
		GGGAGGGCGCCGTGC	ATGCCGTAGTAAGTCGTCG
	YCE-MdSCL8	GAGAACACGGGGGACTCTAGAATG	GTACATCCCGGGAGCGGTACCACGC
		CAATCGGGAGGCTTCA	CAAGCGGAAGCGAC
Luciferase	*NLUC-MdHY5*	GAGCTCGGTACCCGGGGATCCATGC	CGCGTACGAGATCTGGTCGACATCC
		AAGAGCAGGCGACG	GCATTTGCACCACCA
	CLUC-MdMYB22	TACGCGTCCCGGGGCGGTACCATGG	TGTAGTCCATTTGTTGGATCCCTGG
		GGAGGGCGCCGTGC	ATGCCGTAGTAAGTCGTCG
	NLUC-MdSCL8	GAGCTCGGTACCCGGGGATCCATGC	CGCGTACGAGATCTGGTCGACACGC
		AATCGGGAGGCTTCA	CAAGCGGAAGCGAC
	CLUC-MdSCL8	TACGCGTCCCGGGGCGGTACCATGC	TGTAGTCCATTTGTTGGATCCCGCC
		AATCGGGAGGCTTCA	AAGCGGAAGCGAC