

Supplementary Material

Supplementary Figure

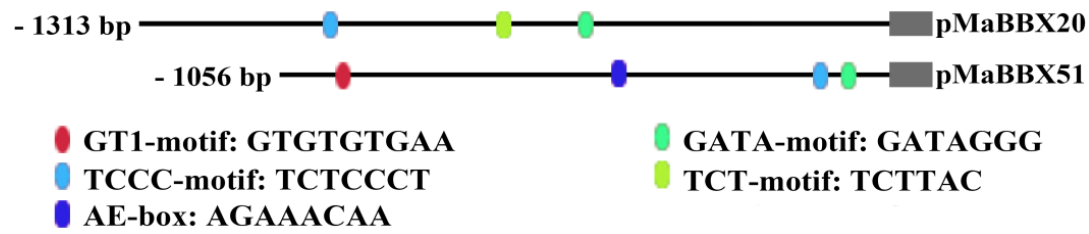


Figure S1. The light-responsive elements of the *MaBBX20* and *MaBBX51* promoters.

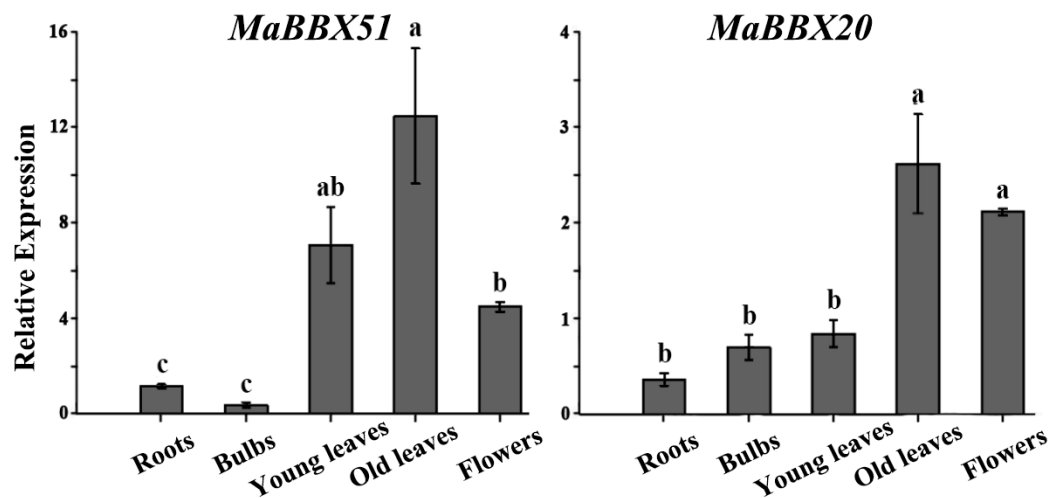


Figure S2. The expression patterns of *MaBBX20* and *MaBBX51* in various tissues (roots, bulbs, young leaves, old leaves, and flowers) of *M. aucheri* 'Dark Eyes'. *MaActin* was used as the reference gene. Data are presented as the mean \pm SD. Different letters above the bars indicate significantly different values calculated using one-way ANOVA followed by LSD analysis ($P < 0.05$).

Supplementary Tables

Table S1. Primer sequences.

Primers for cloning	Sequence (5' to 3')
MaBBX51-cDNA-full length-F	ATGAAGATTCAGTGTGATGCTTGTGAG
MaBBX51-cDNA-full length-R	CTATCCTAAATCTGGGACTGTGAAGTA
MaBBX20-cDNA-full length-F	GAGATTCCAGAACATCGGTTGCTACTG
MaBBX20-cDNA-full length-R	TGATGGTCATAGGAGGATGCATGTC
pMaBBX51-SP1	GGCATGAAGGATGATGGGCTTCCT
pMaBBX51-SP2	ATTGAACCTAGCGCCACCGGATACC
pMaBBX51-SP3	TGAAGGCAGGCTTTTCTTGGCAGAC
pMaBBX20-SP1	AGCTCCCCAGCAAGTACTTACACTGT
pMaBBX20-SP2	CCAGAGTAGCAGTTTATCGTATGCC
pMaBBX20-SP3	GCAGGCTGTGAAACACATCGATCGCA
Primers for vector construction	Sequence (5' to 3')
MaBBX51-2300-F- BamHI	CGAGCTCGGTACCCGGG <u>GGATCC</u> ATGAAGATTCAGTGTGATGCTTGTGAG
MaBBX51-2300-R- SalI	CTTGCTCACCATGGTGT <u>TCGACT</u> CCTAAATCTGGGACTGTGAAGTA
MaBBX20-2300-F-BamHI	CGAGCTCGGTACCCGGG <u>GGATCC</u> ATGAAGATTCAGTGTGATGCTTGTGAG
MaBBX20-2300-R-SalI	CGAGCTCGGTACCCGGG <u>GATCCT</u> CCTAAATCTGGGACTGTGAAGTA
MaBBX51-GBKT7-F-SmaI	CATGGAGGCCGAATT <u>CCCGGG</u> ATGAAGATTCAGTGTGATGCTTGTGAG
MaBBX51-GBKT7-R-SalI	ATGCGGCCGCTGCAGG <u>GTTCGAC</u> TATCCTAAATCTGGGACTGTGAAGTA
MaBBX20-GBKT7-F-SmaI	CATGGAGGCCGAATT <u>CCCGGG</u> ATGGGCTCTCTTTGTGACTTCTGCGGG
MaBBX20-GBKT7-R-SalI	ATGCGGCCGCTGCAGG <u>GTTCGAC</u> TCAGTAGCTTCGCGTC
MaBBX51-NE-F-BamHI	CCAGGCCTACTAGT <u>GGATCC</u> ATGAAGATTCAGTGTGA
MaBBX51-NE-R-SalI	GCGGTACCCTCGAGG <u>GTTCGAC</u> CTATCCTAAATCTGG
MaBBX20-NE-F-BamHI	CCAGGCCTACTAGT <u>GGATCC</u> ATGGGCTCTCTTTGTGACTTCTG
MaBBX20-NE-R-SalI	GCGGTACCCTCGAGG <u>GTTCGAC</u> TCCTAAATCTGGGACTG
MaHY5-NE-F-BamHI	CCAGGCCTACTAGT <u>GGATCC</u> ATGCAGGAGCCGGCGACGAGCTC
MaHY5-NE-R-SalI	GCGGTACCCTCGAGG <u>GTTCGAC</u> CTATGGCCCTTCACCAT
MaMybA-NE-F-BamHI	CCAGGCCTACTAGT <u>GGATCC</u> ATGGAACCCAAGCTCAAGTCATC
MaMybA-NE-R-SalI	GCGGTACCCTCGAGG <u>GTTCGAC</u> TCATAACAAGTTATGGGCATGGAGC

MaBBX51-CE-F-BamHI	GGCGCGCCACTAGT <u>GGATCC</u> ATGAAGATTCAGTGTGA	
MaBBX51-CE-R-SalI	GCGGTACCCTCGAG <u>GTCGAC</u> TCCTAAATCTGGGACTG	
MaBBX20-CE-F-BamHI	GGCGCGCCACTAGT <u>GGATCC</u> ATGGGCTCTCTTTGTGACTTCTG	
MaBBX20-CE-R-SalI	TACATCCCGGGAGC <u>GTCGAC</u> TCCTAAATCTGGGACTGTGAAG	
MaHY5-CE-F-BamHI	GGCGCGCCACTAGT <u>GGATCC</u> ATGCAGGAGCCGGCGAC	
MaHY5-CE-R-SalI	TACATCCCGGGAGC <u>GTCGAC</u> CTATGGCCCTTCACCATTGGCGCTAC	
MaBBX51-62sk-F-EcoRI	CCCCCGGGCTGCAG <u>GAATTC</u> ATGAAGATTCAGTGTGATGCTTGTGAG	
MaBBX51-62sk-R-KpnI	GATTCAGCGAATT <u>GGTACC</u> CTATCCTAAATCTGGGACTGTGAAG	
MaBBX20-62sk-F-EcoRI	CCCCCGGGCTGCAG <u>GAATTC</u> ATGGGCTCTCTTTGTGACTTCTG	
MaBBX20-62sk-R-KpnI	GATTCAGCGAATT <u>GGTACC</u> CTAGTAGCTTCGCGTCCGGCAGAG	
MaHY5-62sk-F-EcoRI	CCCCCGGGCTGCAG <u>GAATTC</u> ATGCAGGAGCCGGCGACGA	
MaHY5-62sk-R-KpnI	GATTCAGCGAATT <u>GGTACC</u> CTATGGCCCTTCACCATTGGCGCTACCGC	
MaMybA -62sk-F-EcoRI	CCCCCGGGCTGCAG <u>GAATTC</u> ATGGAACCCAAGCTCAAGTCATC	
MaMybA -62sk-R-KpnI	GATTCAGCGAATT <u>GGTACC</u> CTATAACAAGTTATGGGCATGGAGC	
pMaMybA-0800LUC-F-SalI	GGCCCCCCTCGAG <u>GTCGACA</u> ACGGCACCATAGCACGGTACAAT	
pMaMybA-0800LUC-R-BamHI	GCTCTAGAACTAGT <u>GGATCC</u> TATTAGCTTTTGCAGCAAGCTGAATTC	
pMaDFR-0800LUC-F-SalI	GGCCCCCCTCGAG <u>GTCGAC</u> GTGGAGTAGCATAGGAACGAGAG	
pMaDFR-0800LUC-R-BamHI	GCTCTAGAACTAGT <u>GGATCC</u> CTTGTGTGTGATTGTGTTGGGAG	
MaBBX51-GADT7-F-EcoRI	GCCATGGAGGCCAGT <u>GAATTC</u> ATGAAGATTCAGTGTGATGCTTGTGAGAAGGCG	
MaBBX51-GADT7-R-BamHI	CTGCAGCTCGAGCTCGAT <u>GGATCC</u> TCCTAAATCTGGGACTGTGAAGTACTCTTC	
MaBBX20-GADT7-F-EcoRI	GCCATGGAGGCCAGT <u>GAATTC</u> ATGGGCTCTCTTTGTGACTTCTGCGGGGAGC	
MaBBX20-GADT7-R-BamHI	CTGCAGCTCGAGCTCGAT <u>GGATCC</u> GTAGCTTCGCGTCCGGCAGAGTGGATCAT	
MaHY5-GADT7-F-EcoRI	GCCATGGAGGCCAGT <u>GAATTC</u> ATGCAGGAGCCGGCGACGAGCTC	
MaHY5-GADT7-R-BamHI	CTGCAGCTCGAGCTCGAT <u>GGATCC</u> TGGCCCTTCACCATTGGCGCTACC	
pMaMybA-AbAi-F-KpnI	TTCGAGCTC <u>GGTACCA</u> ACGGCACCATAGCACGGTACAAT	
pMaMybA-AbAi-R-SalI	ATGCCTCGAG <u>GTCGAC</u> TATTAGCTTTTGCAGCAAGCTGAATTC	
pMaDFR-AbAi-F-KpnI	TTCGAGCTC <u>GGTACCG</u> TGGAGTAGCATAGGAACGAGAG	
pMaDFR-AbAi-R-SalI	ATGCCTCGAG <u>GTCGAC</u> CTTGTGTGTGATTGTGTTGGGAG	
Primers for qPCR	Sequence (5' to 3')	Source
MaBBX51-qPCR-F	GCCAAGAAAAGCCTGCCTTC	
MaBBX51-qPCR-R	GGATACCGGTTGCCAGGTAG	specifically designed
MaBBX20-qPCR-F	CCGGCAAGGAAAGCACATTC	

MaBBX20-qPCR-R	CGAATCTACCCTTCTCCCGC	
MaHY5-qPCR-F	TGGAGAGCGATGAGGAGATAA	Cao et al. 2019
MaHY5-qPCR-R	TAAGCCGCTTGTGCTCTTT	
MaDFR-qPCR-F	GAGAGAGCTGCATGGGATTT	
MaDFR-qPCR-R	TGGCATGGTTGAGGTGATG	Chen et al. 2017
MaANS-qPCR-F	GAGCCTCTCCCTTCCAGCC	
MaANS-qPCR-R	TTCCACCTCATATTCCTCCGC	
MaMybA-qPCR-F	TCCAGAGGTGTCGAAAGA	Chen et al. 2019
MaMybA-qPCR-R	TGTGTAGGCGCATGATAAG	
MaAN2-qPCR-F	CATGAACGGCAGACGAATCT	
MaAN2-qPCR-R	GAAATTAGCATTCAAGCCATCCC	Chen et al. 2017
MabHLH1-qPCR-F	GCAATGCTCAGTTTGCAGATAG	Chen et al. 2019
MabHLH1-qPCR-R	CTCTAGGACACCATCCATGAAG	
MaActin-qPCR-F	AACATTCAGAAAGAGTCCACCC	
MaActin-qPCR-R	GCTTACCAGCAAAGATCAACCG	
NtCHS-qPCR-F	TGACACCCACTTGGATAGTTTAG	
NtCHS-qPCR-R	CGACCTCTGGAATTGGATCAG	
NtCHI-qPCR-F	CTTTCTCGCCGCTAAATG	
NtCHI-qPCR-R	TTTCTGCCACCTTCTCTG	
NtF3H-qPCR-F	CAAGGCATGTGTGGATATGG	
NtF3H-qPCR-R	TGTGTCGTTTCAGTCCAAGG	Chen et al. 2017
NtDFR-qPCR-F	AACCAACAGTCAGGGGAATG	
NtDFR-qPCR-R	TTGGACATCGACAGTTCCAG	
NtANS-qPCR-F	TGGCGTTGAAGCTCATACTG	
NtANS-qPCR-R	GGAATTAGGCACACACTTTGC	
NtUFGT-qPCR-F	GAGTGCATTGGATGCCTTTT	
NtUFGT-qPCR-R	CCAGCTCCATTAGGTCCTTG	
NtTubA1-qPCR-F	CTCCTATGCTCCTGTCATTTC	
NtTubA1-qPCR-R	GGCGAGGATCACACTTAAC	

Table S2. GenBank accession numbers for the known B-box proteins listed in Figure 1 and 2.

Name	GenBank Accession Number	Species
MaBBX51	MW160172	<i>Muscari aucheri</i> 'Dark Eyes'
MaBBX20	MW160173	<i>M. aucheri</i> 'Dark Eyes'
CmBBX8	KP963933	<i>Chrysanthemum indicum</i>
CmBBX13	KP963935	<i>Chr. indicum</i>
CmBBX24	KF385866	<i>Chr. indicum</i>
PpBBX24	Pdr4g016570	<i>Pyrus pyrifolia</i>
MdBBX1	MDP0000202669	<i>Malus domestica</i>
MdCOL4	MDP0000232445	<i>M. domestica</i>
AtBBX1	AT5G15840	<i>A. thaliana</i>
AtBBX2	AT5G15850	<i>A. thaliana</i>
AtBBX3	AT3G02380	<i>A. thaliana</i>
AtBBX4	AT2G24790	<i>A. thaliana</i>
AtBBX5	AT5G24930	<i>A. thaliana</i>
AtBBX6	AT5G57660	<i>A. thaliana</i>
AtBBX7	AT3G07650	<i>A. thaliana</i>
AtBBX8	AT5G48250	<i>A. thaliana</i>
AtBBX9	AT4G15250	<i>A. thaliana</i>
AtBBX10	AT3G21880	<i>A. thaliana</i>
AtBBX11	AT2G47890	<i>A. thaliana</i>
AtBBX12	AT2G33500	<i>A. thaliana</i>
AtBBX13	AT1G28050	<i>A. thaliana</i>
AtBBX14	AT1G68520	<i>A. thaliana</i>
AtBBX15	AT1G25440	<i>A. thaliana</i>
AtBBX16	AT1G73870	<i>A. thaliana</i>
AtBBX17	AT1G49130	<i>A. thaliana</i>
AtBBX18	AT2G21320	<i>A. thaliana</i>
AtBBX19	AT4G38960	<i>A. thaliana</i>
AtBBX20	AT4G39070	<i>A. thaliana</i>
AtBBX21	AT1G75540	<i>A. thaliana</i>
AtBBX22	AT1G78600	<i>A. thaliana</i>

AtBBX23	AT4G10240	<i>A. thaliana</i>
AtBBX24	AT1G06040	<i>A. thaliana</i>
AtBBX25	AT2G31380	<i>A. thaliana</i>
AtBBX26	AT1G60250	<i>A. thaliana</i>
AtBBX27	AT1G68190	<i>A. thaliana</i>
AtBBX28	AT4G27310	<i>A. thaliana</i>
AtBBX29	AT5G54470	<i>A. thaliana</i>
AtBBX30	AT4G15248	<i>A. thaliana</i>
AtBBX31	AT3G21890	<i>A. thaliana</i>
AtBBX32	AT3G21150	<i>A. thaliana</i>

Table S3. Transcription-related abbreviations and motifs in DNA

Abbreviations	Full Name
AE-box	AGAAACAA (5' to 3')
GATA motif	GATAGGG (5' to 3')
G-box	CACGTG (5' to 3')
GT1 motif	GTGTGTGAA (5' to 3')
TCCC motif	TCTCCCT (5' to 3')
TCT motif	TCTTAC (5' to 3')