Supplementary Table S1 Sequences of primers used for DNA cloning, construction of subcellular localization vectors, construction of heterologous expression vectors, construction of Y2H vectors and quantitative RT-PCR of *CsMYB5b* in tea plants.

Purpose	Gene name	Primer name	Primer sequence (5'-3')
DNA cloning	*CsMYB5b*	*CsMYB5b*-F	**ATG**GGTAGGAGACCTTGTTG
		CsMYB5b-R	TTATTGATCTTGAAGCCAATC
	CsTT8	*CsTT8*-F	**ATG**GAGGCGCCGCCGAGTAG
		CsTT8-R	TCAGTTCTGGGGTATTATTTG
	CsWD40	*CsWD40*-F	ATGGAGAATTCGAGCCAAG
		CsWD40-R	TCAAACTTTCAGAAGCTGCA
subcellular localization	*CsMYB5b*	*CsMYB5b*-GFP-F	GGGGACAAGTTTGTACAAAAAAGCAG GCT**ATG**GGTAGGAGACCTTGTTG
		CsMYB5b-GFP-R	GGGGACCACTTTGTACAAGAAAGCTG GGTCTTGATCTTGAAGCCAATC
Construction of heterologous expression vectors	*CsMYB5b*	*CsMYB5b*-attb-F	GGGGACAAGTTTGTACAAAAAAGCAG GCT**ATG**GGTAGGAGACCTTGTTG
		CsMYB5b-attb-R	GGGGACCACTTTGTACAAGAAAGCTG GGTTTATTGATCTTGAAGCCAATC
Construction of Y2H vectors	*CsMYB5b*	*CsMYB5b*-EcoRⅠ-F	CGGAATTCG**ATG**GGTAGGAGACCTTGTT G
		CsMYB5b-HindⅢ-R	CCAAGCTTGGTTATTGATCTTGAAGCCAA
	CsTT8	*CsTT8*-EcoRⅠ-F	CGGAATTC**ATG**GAGGCGCCGCCGAGTAG
		CsTT8-BamHⅠ-R	CGGGATCCTCAGTTCTGGGGTATTATTTG G
	CsWD40	*CsWD40*- BamHⅠ-F	CGGGATCCGT**ATG**GAGAATTCGAGCCAA G
		CsWD40- SalⅠ-R	GAGTCGACTCAAACTTTCAGAAGCTG
Quantitative RT-PCR	*CsMYB5b*	*CsMYB5b*-qRT-F	CCTAGTCCGTACCAAGGCATCA
		CsMYB5b-qRT-R	GATATGTCATCGCCAGGATCTG
	CsGAPDH	*CsGAPDH*-qRT-F	TTGGCATCGTTGAGGGTCT
		CsGAPDH-qRT-R	CAGTGGGAACACGGAAAGC

Supplementary Table S2 Expression analysis of the selected MYB transcription factors (Subgroup 5, 6, 7) in the tea plant treated by sucrose.

Gene ID	Gene Length	log_2 Ratio (9h-Sucrose / 9h-Control)	Type	Subgroups No.
TEA004608.1	921	0.68	R2R3	5
TEA027333.1	903	2.13	R2R3	5
TEA002308.1	933	2.38	R2R3	5
TEA031375.1	885	4.03	R2R3	5
TEA014311.1	879	2.14	R2R3	5
TEA011004.1	612	1.93	R2R3	6
TEA018834.1	741	1.04	R2R3	6
TEA009412.1	1170	1.12	R2R3	7

Supplementary Table S3 Sequences of primers used for quantitative RT-PCR in transgenic tobacco.

Purpose	Gene name	Primer name	Primer sequence (5'-3')
Quantitative RT-PCR	*NtDFR*	*NtDFR*-qRT- F	GCGAAAGGGAGGTATATGTGCTC
		NtDFR -qRT- R	TGCTTGTCCCTCGGTACTCAGTA
	NtANS	*NtANS*-qRT- F	ACTACTACCCCAAATGTCCCCAAC
		NtANS -qRT- R	CCGTTACCCACTGTCCTTCATAGA
	NtANR1	*NtANR1*-qRT- F	CTTGAAGGGTATGCAGATGTT
		NtANR1-qRT- R	GCAGAGCAAACATATCGTCCAG
	NtANR2	*NtANR2*-qRT- F	AGCGTGTCGTTTTGACCTCATC
		NtANR2-qRT- R	CCAATTAGACTCATCCACGACG
	NtLAR	*NtLAR*-qRT- F	GCAGCAGAAGACTATAGAACTGT
		NtLAR -qRT- R	G
			CATGTGTTAGAGCTGCAACTACAC
	NtActin	*NtActin*-qRT- F	TAGAAACCCCAAGTACCCTCG
		NtActin-qRT- R	TGCTTTCTTCGTCCCATCAG