

ZmCCA1a* on Chromosome 10 of Maize Delays Flowering of *Arabidopsis thaliana

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Supplementary Table 1 Primer sequences for DNA markers used for fine mapping of the locus containing *ZmCCA1a*.

Maker Name	Primer Name	Primer Sequence	RefGen_v4 position in B73
bnlg210	bnlg210F	GCCTCGCACCAAGACATAATA	27656215
	bnlg210R	TGCCCCATTTGAGTAGACTTC	
S873	S873F	GCTGGACCACCATCACAAAC	76273093
	S873R	ACACATAGACGAAGTTGAAGCA	
S334	S334F	TGCTGGTGAGCCTCTTAGTC	77071150
	S334R	TGTTGCTGCCAAGATACACTC	
QCCA5-2	QCCA5-2F	CTGTTCTTGCGACCTTGAGAT	77699557
	QCCA5-2R	AATTCCAGAGCCATATGAGCAT	
GS575	GS575F	CTTCTACCAAGTGTGCCCAAG	77548207
	GS575R	GACATGCTCCATCTGCCCTA	
IDP7868	IDP7868F	GTTGGTTCTTCTGGCATTCTG	80160229
	IDP7868R	GCACCCGTTGAATATGTCG	
S147	S147F	GATCCATCATCCATCGTCAG	83253972
	S147R	CAGTTTCTGCCACAGCTAG	
S951	S951F	TCTATTACGCTTGTGCTTATG	84831086
	S951R	GTCTTGCGTCTGCCACTATA	
S165	S165F	TCATCGTTGTCTTCGTGATAGA	87264986
	S165R	TTGTCAATCTTGGTTGCTTGG	
S748	S748F	TGACAGCATTATCATCACCCAT	87426862
	S748R	ACCAGCGTTAACTGCTAGTG	
GS617	GS617F	ACGACGGTGACAGACAATTAG	87620093
	GS617R	CAGACCTTTGTTTGCCCTCT	
PIF3 1-2	PIF3 1-2F	CAAGTCGTCGATGCTGGAG	87874663

Maker Name	Primer Name	Primer Sequence	RefGen_v4 position in B73
	PIF3 1-2R	ATCCTGTTTGTGGCTCTCTC	
IDP582	IDP582 F	ACCGATGTTGCAAAGAAAGG	91161576
	IDP582 R	GGTATAGCTTTGGCATTGGG	
3-7	3-7F	CGCCCTGCTCCACTTCATA	94802843
	3-7R	TGGCACCATCCTCTCCGTC	
S456	S456F	TTGCTGTTGCTTTCGTCGTC	95626643
	S456R	TCCACTTCCTCTCCCACCTC	
GS668	GS668F	GCACTGGGTGTACCTACAG	87977497
	GS668R	ACCTCCGTCCATCAATCCA	
QCCA4-2	QCCA4-2F	ACTTTGTTTCAGGGAATGGTCT	77699393
	QCCA4-2R	GCCAGAGCAAGCAGTCAAG	
umc1330	umc1330F	AGCAAAGAAGCCAAAGAGCAACT	123897197
	umc1330R	GTCACCACCGTCTGCTGGTA	

Supplementary Table 2 Genomic sequence of the BAC clone containing *ZmCCA1a* on chromosome 10 in the maize inbred line CML288. The *ZmCCA1a* CDS sequence is highlighted in yellow.

TTAGGTCCTAAGAACTTGGTATTGTCCACCTACGAAAAGGAATATCTAGCCATTTTATTTGCAGTTGATCACTGGCGCCCTTACCTCCAACATGGAGAATTTTTTATCA
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AGAAAGGAGTGGAACCGTGTGGCAGATGCTCTTTCTAGACGGCCAAACCTATGCACTGATGGTTCCAACTGCAACTCAACGTGTTAGCAACTTCGACAGTGG
TACCAAGTTGGCTCACCGAGGTGACTAACAGCTATGAGGAGAATGAGGAAGCTAAGAGCATTCTGAGTACGCTTGTTCAGGGGATAACAATAGAGCCATTCACTT
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GCTTGCCAAGGTTGGCAGACTTTTAGGGTGGTCTAGGTTTTTTAACGTAATATCAGAATCTCTGTCTCTCAATTAAAAAGAAATAGAATCGACCATGTTTTAAAGA

[illegible]

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[illegible]

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ACTCTTTCATAGTTGGAAAAACCCTGAAGGCCAGGAATTCCTGCACTAAATCTCTAGTGCTAATATGTTCTGCAATAATTTTGAATTCGCCCAGTCGAGCCCAAGTTG
GACCGTCTACTGCCATCTTGATCGGGGTCTTGTTTCTCCGAAGATTAGTTCAAGAGGGGCTCTGAACCAGCTTCTCTTTATCTTCGTCAACTTTGACATAAAACCATT
CTGATTTCCAGCCTGCCGGCCATTTGCTTCGGTAGCTGATCACGGGAACTTCGTGGTTTTCCGATAAGCAAAATTATAACAACCAAAATTTTCATGCAATCCATCTT
TTCTGGCCTTAGTTTGGTAATGCAGCTCATGAACTCGACAGAAGCTGCCGGCAAACGGCTCCACCGCTGGCTTCGGAGAGCCCAGATATAAACTGAGCCTGA
CAATCGCGTTGGGAGTCAGTTGGTGAAAATAGATACCAAATCTTTCAGCACATCAGAGATCATCCTATTTAAGGGGAATCTCAACCCAGCTTTTAGAAAGCTCTTG
AAAATAACTATTTTCATCCTTTTCTGGCTTCGGGGTAGTTTTCTTCCCCCGAAGCGAAGCAGCTTCTTCTCATTCTCACTGAAATAGCCCCGACTTCACCATTTTGGAG
AAATCAGCCTTAGAGACAGTCGACTTTCCGAAGTCCAAATGGCTGGGCTTGCTTGGAACGGCAATATGGTAATCATCATCGGAATCAGCTTCCTCAATATCTCTTC
CTCCGCTTCGGCAGCAACTTGTTCTGTATCGGCAACAGTCTGCTCTGTCTCGGCAGTGCGGATTCCTCCCGAGGTCACCAGTCCGGATCGTTGCATCGCTTCGGAG
ATTGGAACAGTCTCCGCTCCTTCGGCTTCGCTCCCTCACGCTCAACTCTAGCGGTAGAGCGCACTCTGGCCATTTAATTCTGAATTTCTTGGAACATAAAAACTT
TCTCTCCCGAAGCTTTTTCTTCTGACGAAGTAGGCTTTAACTGGAGCTTCGTCTGATTGCGAGACTCAAGCTTCGGCTATGGTTAAAAATTTTGGCAGCAAAACA
GTGCAATAGCAATGAATGCTGTGGTAACTTCACACCTACCTGTCTGTTTATATAGCACTGTAGGTAAGAAGGTGAATCGTCAGGATTTTGCACCAGGCAAACAGCT
GCTCACACCCACTGCGCGGTGGACCGCAAAGATCAAATAGTAACCCTACAGGGTGGGACCGCTATCGTTTCTCGACAACGAGCTCAGGGAAGGTGTTTTTGGACC
TTCGGCTTCCTAAAGCCTAAGAGACTTTTTTACGGATCAAGCTCGTTACGAAAAACGATCTAGCACCGCGAAGGGGCTACTGTTGGGACCATGCTTCGTGCGCGA
AGGTCCTGCAGAGAGATACAGCTTCGGCTGAAGCTGCTCGTACGTGATGCCAAAGGCATCATTTCATGAAGCTTTGATAATACAACATATCCGAAGGAGAAGGGAC
GAACCGACTTAAAGATAAAATGACCTTTTAGTCCATAAAGGTCTGAGTCAATGTTGTAAATTTTATGAGGGGCATGATTGTAATTCCTCACAGGCTGTGTCTGTGC
CTACAAATAGTGAACAGTATTCCTTTACTGTTACGCATTCTGCAATTATAATCGCATCACTTGGAATATTCTTCGCCAAGACAGAGGTACAAATGTATCTAACATT
TGAATACATCAAATTTGTTTAATATGAAAATGATGATTATTTATAATTTACTTCTTATTAATGCTTCATATCTCGAATTATTTTATACAACCTCTGGGAGTTCAATTACGAA
GATCCAACCTTCGTAATTGTTTCATCTTTGACCTTCGTCCGAAGTTCATTAAATCCGTAAGGAAATAATGCTTCAGCGGACGAAGGGCATTAAACATTTAACATTTTAT
GTTGCCTTGTTCTTAATTCATAGCATTTGAGAACGAGTCCCCAACAGTCACCTCGTCTCCTTCGTGCGCGGTCTTTAGTACGTCCCAAATCTCTTTAGCACTCTTCAA
CCCTTGACCTTATTATATTCCTCTCGACTTAGAGAGATGAGGAGTATAGTAGTTGCTTGGAATTGAAGTGCCGGATTTGGGCGACTTCGTCCGCATCATAATTTTC
ATCCCCTACGGATGGTACCTGTGCTCCAAATGCAACAATGTCCCATATGCTTGTGTGGAGTGAGGTTAGGTGATACCCCATCATATCACTCCACCTACTATAATCTTCA

CCATTAAAGACTGGTGGTTTGCCTAATGGGACAGAAAGTAAAGGAGTATGTTTAGAGATGCGAGGGTAGCGTAGGGGGATCTTACTAAATTTCTTGCGCTCATGG
CGCTTAGAAGTGACGGACGGCGCGTCGGAGCCGGAGGTGGATGGCGACGAAGAGTCGGTCTCGTAGTAGACCACTTTCTTCATCTTCTTTTTCTTCTCGCCGCTC
CGATGCGACTTGTTGTGTGAAGGGGATCCCTTCACCTTGTTATCGGACTCCCCGATGGAGCTTTCCCGTGGCTTGTTGGCGGGCTTCTCGTCGGTCATCATCTCCTT
CTTGACGTGATCTCCCGATATCACTTCGAGCGGTTAGGCTCTAATGAAGTACCAGACTCTGATACCAATTGAAAGTCGCCTAGAGGGGGGTGAATAGGCAAATCTA
AAATTTATAAACTTTAAGCACAACTACAAGTCGGGGTTAGCGTTAGAAATAAAGTCGAGTCCGAAAGAGAGGGGTGAAAACAAATAACAAGCAAATAAAGTGGATG
ACACGGTGATTTGTATTACCGGGGTTGATTCTTGCAAATCTACTCCCCGTTGAGGTGGTCACAAAGACCGGGTCTCTTCAACCCTTTCCTCTCTCAAACGGTCA
CTTAGACCGAGTGAGCTTTCTCCTTAATCAAACGGGTCACTTAGACCCCTCACAAGGACCACCACAACCTTGGTGTATCTTGCTTTGATTATAAGTGTCTTGAGAATA
AGAATGGGAAGAAGAAAGCACTATTGCAAAAGCCAAAGCGACAAGAGCGCCAAATAACACACAGATCACTGTCTCTCTCAAGTCACTAATCACTAATGATCACTTGT
CTTAATTGTGGAACCTTGAGAGATTGGAAGCTTTGATTGTGTCTTTGAATGGATTGCTAGCTCTTGATTGAATGTAGAGGATTGGAATGCTTGGTTCAAGTGAATG
GAGGTGGTTGGGGTTGATTTATAGCCACCAACCACTTCCTAGCCGTTGCTCCAATTCTGCCAACCAGCGGACGGTCCGCGCCCTGGTCCGGACGGTCCGCCCCTAC
ACATCAACGGCTGAAAACACAACGGTCAGCAGTAACGGCTATATCAACGGCTATTTTGCATTTAATGCGTCGTCAGATGCCAGATAAAGGCAGTCGCGGACGGTTC
GGTCGTGCACCTCGGACGGTCCGTGAGGACGCTATAATTCATTTTACCGAACTCGTCACCTTCAGGGTTTTTCAGTTTTTTACCGACTGAACGGTCCGCGCCTGAGG
CCGGACGGTCCGCACGTCATCTCGGACGGTGCTTGCTTTTCTCCAGACGATCCGTAGTGTAGACTTGGATTTTGTATTGGTTCTATCCGAGGGTTATCCTGGTGT
CGCGGACGGTGCGCCGCAAAGGCCCGGACGGTCCGCGCTTAGTCTATTTTCCAAAAGCTTCTCCTGTCCGGAATAATCTACGGTATTCCGGATAGTCGACTTAG
AATAGTTGTAGATGAACTTATGCACCTGTGAAATGATCAGCTAGATAAACTGGTTAGTCCACAAGGTTTGTGATGGTCGTCAAACACCAAATCAATTATAGGTAATG
TTGAGACTATTTCCCTTTCAAATATAAACATAAACTACTTCATCGGTTCTAAAATAGAAGTCGTTTTAGCCTTTTGACAAATTCATTCAATAATTGATATATGTGTCTAA
ATTTATTGTCATTTATTTAAATATAGACATAAAAATGAAGACCTAAAACGACTACTAATTTGGTTCATAGGGAGTAAGAGCTAAAACAAATACTATTTTGGGATGGATG
GAGTATGATTTCTATGAATATAGTTACCTTTATTATTCTCTGTCCAAATTGAGTAAATAATTACAAATAGTTACTCTCGGCGCACCTGCATATATATTTCTCCGGTACTGC
AGTATTCTATATTTCTAAGAGTTTGGCTATGACGATTCAGGCTAGACGACGCAGCAAAACCATGTATGATGATTGTATCAATACCTATCCAAGCGGCCAAATCTCTCAA
TTTCTTTACCAACGGACTCATAAAGAAGTGGTGGTGTACGTAGATCCAATTGACATAGTCACTTAGGTAGTGTTAGATGGAGGGACGATGAAGGATGAAGATGC
TGGATGGGATGAGATCATTCTAACTTGACCCATGTTTGGATGAAGGTCTAGAGTCATGATCAAGGAATATTCTTCAAAAATAGTGGATGAGCCTATCCCTCGAAAAA
TAAAAGACGGGGTCAGCCCAGAGTTGATCCCGTCCCATCCCTCGTTGACACCGAACCAAACTGCCTAAGCAGTGTGTTGCCCTTTGATCTCACCCTTGGGTG
CTCAAGCACTGTCAGACTGATAAGGTGATTGGGCGATTGGCTCTGTTGTCCAACGTAACCTTGGCGCTACTGCGAAAGCTTGCATGCCTGCAGGTCGACTCT
AGA

Supplementary Table 3 Coding sequences of *ZmCCA1a* and *ZmCCA1b* in maize inbred lines CML288 and HZ4.

A and B: CDS of *ZmCCA1b* (*Zm00001d049543*) in maize inbred line CML288 and HZ4 respectively.

C and D: CDS of *ZmCCA1a* (*Zm00001d024546*) in maize inbred line CML288 and HZ4 respectively.

A

ATGGAGATGAATTCCTCTGGCGAGGAAACTGTGGTAAAGGTAAGAAAGCCGTACACAATAACGAAGCAGCGGGAGCGGTGGACA
GAGGCTGAACACAAACGGTTCCTTGAAGCCTTGAAACTTTATGGCAGAGCATGGCAGCGCATAGAAGAGCATGTTGGGACAAAGA
CAGCCGTGCAGATCAGAAGTCACGCTCAAAAGTTCTTCACTAAGTTGGAAAAGGAAGCTATGAACAATGGTACTTCTCCGGGGCA
AGCCCATGACATTGACATACCTCCACCACGGCCTAAAAGAAAGCCAAACAGTCCATATCCTCGAAAAAGTTGTCTCAGCTCCGAGA
CACAAACCAAAGAACTTCCAAATGACAAGTCAACAAAACCAAATATGCCCTTGAGCAATGGGCATGTAAAAATGGTAGGCGATGC
ATCTCTTCAGAATTTTCAAAGGAAGGAGTTGTCTGAAAAAGGAAGTCGCTCGGAAGTTCTTAATCTCTTCCGTGATGCCCCATCTG
CATCATTTTCTTCAGTTAACAAAAGCTCTTCAAATCATGGGGCACCCAGGAGGACCGAGGCAAGTAAACAGAAAGCCGAGATAT
GTCCATCATGGAAAATAATTCTTTTAACCCCAACACCCAAGAGGATGTAAAGGTGATCAGTGATCAGGAAATGGAAAGGCTTAATG
GTATCCAGATCAGATCTAAATGTGAACATTCTCATGAGGGGTATTTGGACATCTCAACGCAACAAATGAAGCTAATGCCAAAGTCTG
TGGAGACAACATATGTGGATGAACAAACTGCAAGAGCTTCACACACCCTAGCAGAGAGCAACGGGACAGCTAGCGTTCCAGTGA
CTGTACCTGAAGGAACATCCTGATCAAACAAGTGATCAAGTGGAATCAATGGAAGCATGAACCCATGCATCCATCCAATGGTT
TCTGCAGACCCAAAATTTGGTAGTAGTGCCACACCACAGACTTTTCCTCATAATTATGCTGCCTTTGCTCCAATGATGCAGTGCAAC
TGCAACCAAGATACGTACAGGTCATTCACCAACATGTCATCCACGTTCTCCAGCATGCTTGTTTCCACGTTGTTGTCAAACCCTGCC
ATCCATGCAGCTGCCAGGCTCGCAGCATCATACTGGCCAGCAGCTGAAGGTAACACTCCTATTGATCCGAATCAAGAAAACCCTGC
AGATGGCGTCCAAGGAAGGAACATAGGCTCTCCTCCAAGCATGGCTTCTATTGTAGCAGCTACAGTTGCTGCAGCATCTGCATGGT
GGGCAACACAAGGTCTTCTCCCTTTCTTCGCTCCACCCGTGGCTTTTCCATTTGTACCAGCTCCTAGTGCTGCCTTTCCCACAGTTG
ATGTTCCACGACCTTCAGAGAAAGACAGAGATTGCCCAGTTGAAAATGCACAGAATGAATGCCAAGAAGCTCGAAAACAGGTAC
AGTTCGAAGGTTTAAGAGTTGCTGCTTCTTCAGAGTCTGATGGGAGTGGAAGGCGAGGTGTCTCTCCATACGGAGTTAAAGCT
ATCTCCTGCCCAGAATGCTGATGCCACACCTACCACAGGAGCTGGCACAAATGATGCATTACAGGAATAAGAAAAAGCAGGATCGCT

CTTCATGCGGTTCTAACACACCTTCAAGTAGTGATGTAGATGCGGGCAATGTTTCCTGAGGAGGACAATGCTAATGAGAAGGCGAAG
CAAGCCTCCTGCAGCAACTCTTCAGCTGGTGACACTAACCACCGCAGATTTAGAAGCAATGGAAGCACAAGTGATTCATGGAAGG
AAGTTTCCGAAGAGGGTCGTCTGGCTTTCGATGCGCTGTTCAGTAGGGAAAAGCTTCCGCAAAGCTTTTCTCCCCACAAGCAGT
AGACTCGAAGGAGGTTGCCAAGGAGGAGGAAGATGAAGTGACCACAGTGGCAGTTGACCTCAACAAGAATGCCACAAGCATTGA
TCATGATGACCTCGACACAATGGATGAGCCCAGGGCTTCCTTTCCCAATGAATTGTCGCACCTGAAGCTGAAATCGCGCCGTACAG
GCTTCAAACCATACAAGAGATGTTCTGTGGAAGCGAAGGAAAACCGGGTGCCGACTAGCGACATGGTTGGTACCAAGAGGATTCTG
TCTTGATAGCGAAGCATCCACATAA

B.

ATGGAGATGAATTCCTCTGGCGAGGAACTGTGGTAAAGGTAAGAAAGCCGTACACAATAACGAAGCAGCGGGAGCGGTGGACA
GAGGCTGAACACAAACGGTTCCTTGAAGCCTTGAACTTTATGGCAGAGCATGGCAGCGCATAGAAGAGCATGTTGGGACAAAGA
CGGCCGTGCAGATCAGAAGTCACGCTCAAAAGTTCTTCACTAAGTTGGAAAAGGAAGCTATGAACAATGGTACTTCTCCGGGGCA
AGCCCATGACATTGACATACCTCCACCACGGCCTAAAAGAAAGCCAAACAGTCCATATCCTCGAAAAAGTTGTCTCAGCTCCGAGA
CACAAACCAAAGAACTTCCAAATGACAAGTCAACAAAACCATATATGCCCTTGAGCAATGGGCATGTAAAAATGGTAGGCGATGC
ATCTCTTCAGAATTTTCAAAGGAAGGAGTTGTCTGAAAAAGGAAGTCACTCGGAAGTTCTTAATCTCTTCCGTGATGCCCCATCTG
CATCATTTTCTTCAGTTAACAAAAGCTCTTCAAATCATGGGGCACCCAGGAGGACCGAGGCAAGTAAAACAGAAAGCCGAGATAT
GTCCATCATGGAAAATAATTCTTTTAACCCCAACACCCAAGAGGATGTAAAGGTGATCAGTGATCAGGAAATGGAAAGGCTTAATG
GTATCCAGATCAGATCTAAATGTGAACATTCTCATGAGGGGTATTTGGACATCTCAACGCAACAAATGAAGCTAATGCCAAAGTCTG
TGGAGACAACATATGTGGATGAACAAACTGCAAGAGCTTCACACTCCCTAGCAGAGAGCGACGGGACAGCTAGCATTCCAGTGAC
TGTAACCTGAAGGAACTCATCCTGATCAAACAAGTGATCAAGTGGGAATCAATGGAAGCATGAACCCATGCATCCATCCAATGGTTT
CTGCAGACCCAAAATTTGGTAGTAGTGCCACACCACAGACTTTTCCTCATAATTATGCTGCCTTTGCTCCAATGATGCAGTGCAACT
GCAACCAAGATACGTACAGGTCATTACCAACATGTCATCCAGCTTCTCCAGCATGCTTGTTTCCACGTTGTTGTCAAACCCTGCCA
TCCATGCAGCTGCCAGGCTCGCAGCATCATACTGGCCAGCAGCTGAAGGTAACTCCTATTGATCCGAATCAAGAAAACCCTGCA
GATGGCGTTCAAGGAAGGAACATAGGCTCTCCTCCAAGCATGGCTTCTATTGTAGCAGCTACAGTTGCTGCAGCATCTGCATGGTG
GGCAACACAAGGTCTTCTCCCTTTCTTCGCTCCACCCGTGGCTTTTCCATTTGTACCAGCTCCTAGTGCTGCCTTTCCCACAGTTGA
TGTTCCACGACCTTCAGAGAAAGACAGAGATTGCCAGTTGAAAATGCACAGAATGAATGCCAAGAAGTTCGAAAACAGGTACA
GTTCTGAAGGTTTAAGAGTTGCTGCTTCTTCAGAGTCTGATGGGAGTGGAAAAGGCGAGGTGTCTCTCCATACGGAGTTAAAGCTAT
CTCCTGTCCAGAATGCTGATGCCACACCTACCACAGGAGCTGGCACAAATGATGCATTCAGGACTAAGAAAAAGCAGGATCGCTC
TTCATGCGGTTCTAACACACCTTCAAGTAGTGATGTAGATGCGGGCAATGTTCTTGAGGAGGACAATGCTAATGAGAAGGCGAAGC
AAGCCTCCTGCAGCAACTCTTCAGCTGGTGACACTAACCACCGCAGATTTAGAAGCAATGGAAGCACAAGTGATTCATGGAAGGA
AGTTTCCGAAGAGGGTCGTCTAGCTTTTCGATGCCCTGTTTCAGTAGGGAAAAGCTTCCGCAAAGCTTTTCTCCCCACAAGCAGTAG
ACTCGAAGGAGGTTGCCAAGGAGGAGGAAGATGAAGTGACCACAGTGGCAGTTGACCTCAACAAGAATGCCACAAGCATTGATC
ATGATGACCTCGACACAATGGATGAGCCCAGGGCTTCCTTTCCCAATGAATTGTCGCACCTGAAGCTGAAATCGCGCCGTACAGGC
TTCAAACCATACAAGAGATGTTCTGTGGAAGCGAAGGAAAACCGAGTGCCGGCTAGCGACATGGTTGGTACCAAGAGGATTCGTC

TTGATAGCGAAGCATCCACATAA

C.

ATGGAGGTGAATTCCTCTGGTGAGGAAACGGTGATAAAGGTAAGGAAGCCATACACAATAACCAAGCAGCGGGAGCGGTGGACA
GAGGCTGAGCACAAACGGTTCCTTGAAGCCTTGAACTTTATGGCAGAGCATGGCAGCGCATAGAAGAGCATGTTGGGACAAAGA
CGGCCGTGCAGATCAGAAGTCACGCTCAAAAGTTCTTCACCAAGTTGGAAAAGGAAGCTATTAACAATGGTACTTCTCCGGGGCA
AGCCCATGACATTGACATACCGCCACCACGGCCTAAAAGAAAGGCTAACAGTCCATATCCTCGAAAAAGTGGTCTCAGCTCTGAG
ACACCAACCAAGAAGTTCCTCAAGTGACAAGTCAACAAAACCAATATGCCCTTGAGCAATGAGAATGTACTAATGGCAGGTGATG
CATCTCTTCAGAAATTTCAAAGGAAGAAGTTGTCTGGAAAAGAAAGTTGCTCGGAAGTTCTTAATCTCTTCCGTGATGCCCCATCT
CCATCATTTTCTTCAGTTAACAAAAGCTCTTCAAATCATGGTGACCGATTGAGGCAAGTAAAACAAAAATCCGAGATATGACCATT
ATGGAAAATAGTTCTCTTAACCCCAACATGCAAGAGGATGTAAAGGAAATCAATGATCAGGAGATGGAAAGGCTTAATGGTACCCA
AATCAGCTCTAAATGTGAACACTCTCATGAGGGATATTTGGACATCTCAATGCAACAAATGAAGCTAAAGCCAGAGTCTGTGGAGA
CAACAGATGTGGACAAACAAACCGCAAGAGCTTCACACTCCCTAGCGGAGATAACTGGGACAACCTAGCATTCCGGTCACTGCAAC
TGAAGAACTCATTCTGTTCTAACAAGTGATCAAGTGGGAATCAATGGAAGCATGAACCCATCCATCCATCCAATGTTTCCTGCAG
ATCCAAAATTTGATAGCAGTGCCACACCACAGCCTTTTCCTCATAATTATGCTGCCTTTGCTCCAATGATGCAGTGCAACTGCAACC
AAGATACCCACAGATCATTGGTCAACATGTCATCCACCTTCTCCAGCATGCTTGTTTCCACGTTGTTGTCAAACCCTGCCATCCATG
CAGCTGCCAGGCTCGCAGCATCATACTGGCCAGCAGCTGAAGGTAACACTCCGATTGATCCGAATCAAGAAAATCTTGCAGATGGT
GTTCAAGGAAGGAGCATAGGGTCTCCTCCAAGCATGGCTTCTATTGTAGCAGCTACAGTTGCTGCAGCATCTGCATGGTGGGCAAC
ACAAGGTCTTCTCCCTTTCTTCGCCCCACCCATGGCTTTTTTCATTTGTGCCAGCTCCCAGTGCCGCCTTCCCCACAGTTGATGTTCC
ACGACCTTCAGAGAAAGATAGAGATTGCCAGCTGAAAATGCACAGAAGGAATGCCAAGAAGCTCGAAAACAGGGACAGCTTGA
AGGTTTCAGAGTTGCCGCTTCTTCAGAGTATGATGGGAGTGGAAGGCGAGGTGTCTGTCCACACAGAGTTAAAGATATCTCCTG
TCCAGAATGCTGATGCCACGTCTGCCGCAGGAGCTGACACGACTGATGCATTCATGAATAAGAAAAAGCAGGACCGCTCTTCATGC
GGTTCTAACACACCTTCAAGTAGTGATGTAGATGTGGACAATGTCCCTGAGAAGGAGGGCAATGCTAATGAGAAGGCGAAGCAAG
CCTCCTGCAGCAACTCTTCAGCTGGTGACACTAACCACCGCAGATTTAGAAGCAGTGGAAGCACAAGTGATTCATGGAAGGAAGT
TTCCGAAGAGGGTCGTCTGGCTTTCCATGCGCTGTTCAGTAGAGAAAAGCTTCCGCAAAGCTTTTCTCCCCACAAGCAGAAGGC
TCGAAGGAAGTTGGCAAGAAGGAGGAAGATGAAGTCACCACAGTGGCAGTTGACCTCAACAAGAGTACCACAAGCATTGATCAT
GACCTCGACACAATTGGTGAGCCAAGGGCTTCCTTTCCCAATGAACTGTCGCCCCTGAAGCTGAAATCGCGCCAAACAGGCTTCA
AACCATACAAGAGATGTTCTGTGGAAGCGAAGGAGAATAGGGTGCCGGCTAGCGACGAGGTTGGTACCAAGAGGATTTCGTCTTGA

TAGTGAAGCATCAACATGA

D.

ATGGAGGTGAATTCCTCTGGTGAGGAAACGGTGATAAAGGTAAGGAAGCCATACACAATAACCAAGCAGCGGGAGCGGTGGAC
AGAGGCTGAGCACAAACGGTTCCTTGAAGCCTTGAACTTTATGGCAGAGCATGGCAGCGCATAGAAGAGCATGTTGGGACAAA
GACGGCCGTGCAGATCAGAAGTCACGCTCAAAAGTTCTTCACCAAGTTGGAAAAGGAAGCTATTAACAATGGTACTTCTCCGGG
GCAAGCCCATGACATTGACATACCGCCACCACGGCCTAAAAGAAAGGCTAACAGTCCATATCCTCGAAAAAGTGGTCTCAGCTC
TGAGACACCAACCAAAGAACTTCCAAGTGACAAGTCAACAAAACCAAATATGCCCTTGAGCAATGAGAATGTACTAATGGCAGG
TGATGCATCTCTTCAGAAATTTCAAAGGAAGGAGTTGTCTGGAAAAGAAAGTTGCTCGGAAGTTCTTAATCTCTTCCGTGATGCC
CCATCTCCATCATTTTTCTTCAGTTAACAAAAGCTCTTCAAATCATGGTGCACCGATTGAGGCAAGTAAAACAAAAATCCGAGATA
TGACCATTTATGGAAAATAGTTCTCTTAACCCCAACATGCAAGAGGATGTAAAGGAAATCAATGATCAGGAGATGGAAAGGCTTA
ATGGTACCCAAATCAGCTCTAAATGTGAACACTCTCATGAGGGATATTTGGACATCTCAATGCAACAAATGAAGCTAAAGCCAG
AGTCTGTGGAGACAACATATGTGGACAAACAAACCGCAAGAGCTTCACACTCCCTAGCGGAGAGAACTGGGACAACCTAGCATTC
CGGTCACTGCAACTGAAGAACTCATTCTGTTCTAACAAAGTGATCAAGTGGGAATCAATGGAAGCATGAACCCATCCATCCATCC
AATGTTTCCTGCAGATCCAAAATTTGATAGCAGTGCCACACCACAGCCTTTTCCTCATAATTATGCTGCCTTTGCTCCAATGATGC
AGTGCAACTGCAACCAAGATACCCACAGATCATTGGTCAACATGTCATCCACCTTCTCCAGCATGCTTGTTTCCACGTTGTTGTCA
AACCCTGCCATCCATGCAGCTGCCAGGCTCGCAGCATCATACTGGCCAGCAGCTGAAGGTAACACTCCGATTGATCCGAATCAA
GAAAATCTTGCAGATGGTGTTCAAGGAAGGAGCATAGGGTCTCCTCCAAGCATGGCTTCTATTGTAGCAGCTACAGTTGCTGCAG
CATCTGCATGGTGGGCAACACAAGGTCTTCTCCCTTTCTTCGCCCCACCCATGGCTTTTTTCATTTGTGCCAGCTCCCAGTGCTGCCT
TCCCCACAGTTGATGTTCCACGACCTTCAGAGAAAGATAGAGATTGCCCAGCTGAAAATGCACAGAAGGAATGCCAAGAAGCTC
GAAAACAGGGACAGTTTGAAGGTTTCAGAGTTGCCGCTTCTTCAGAGTATGATGGGAGTGGAAAAGGCGAGGTGTCTGTCCACA
CAGAGTTAAAGATATCTCCTGTCCAGAATGCTGATGCCACGTCTGCCGCAGGAGCTGACACGACTGATGCATTCATGAATAAGA
AAAAGCAGGACCGCTCTTCATGCGGTTCTAACACACCTTCAAGTAGTGATGTAGATGTGGACAATGTCCCTGAGAAAGAGGGCA
ATGCTAATGAGAAGGCGAAGCAAGCCTCCTGCAGCAACTCTTCAGCTGGTGACACTAACCACCGCAGATTTAGAAGCAGTGGA
GCACGAGTGATTCATGGAAGGAAGTTTCCGAAGAGGTTGTAATCTACCAACACTATGCCAATTCATCTGCCCCAACCTTTGAGC
ATGCCGCACTGCCTTTCTAATTCACCTTTTTTTGTTGGCAGGGTCGTCTGGCTTTCCATGCGCTGTTTCAGTAGAGAAAAGCTTCCGC
AAAGCTTTTCTCCCCACAAGCAGAAGGCTCGAAGGAAGTTGGCAAGGAGGAAGATGAAGTCACCACAGTGGCAGTTGACCTCA
ACAAGAGTACCACAAGCATTGATCATGACCTCGACACAATTGGTGAGCCAAGGGCTTCCTTTCCCAATGAACTGTCGCCCCTGAA

GCTGAAATTGCGCCGAACAGGCTTCAAACCATACAAGAGATGTTCTGTGGAAGCGAAGGAGAATAGGGTGCCGGCTAGCGACG
AGGTTGGTACCAAGAGGATTCGTCTTGATAGTGAAGCATCAACATGA

Supplementary Table 4 Primers used in this study

	Gene ID	Primer Name	Primer Sequence (5' to 3')
For cloning of <i>ZmCCA1b</i>	Zm00001d049543	ZmCCA1b-FP	ATGGAGATGAATTCCTCTGGCG
		ZmCCA1b-RP	TTATGTGGATGCTTCGCTATCAAG
For cloning of <i>ZmCCA1a</i>	Zm00001d024546	ZmCCA1a-FP	ATGGAGGTGAATTCCTCTGGTG
		ZmCCA1a-RP	TCATGTTGATGCTTCACTATCAAG
For cloning of cDNA sequences of corresponding genes to pGBKT7 or/and pGADT7 vectors	AT1G01060	pGBKT7 AtLHY-FP	ATGGCCATGGAGGCCGAATTCCTGGGAATGGATACTAATACATCTGGAGAAGAAT
		pGBKT7 AtLHY-RP	TGCGGCCGCTGCAGGTCGACGGATCCTCATGTAGAAGCTTCTCCTTCCA
	AT1G01060	pGADT7 AtLHY-FP	ATGGAGGCCAGTGAATTCCACCCGGGAATGGATACTAATACATCTGGAGAAGAAT
		pGADT7 AtLHY-RP	ATCTGCAGCTCGAGCTCGATGGATCCTCATGTAGAAGCTTCTCCTTCCA
	AT2G46830	pGBKT7 AtCCA1-FP	ATGGCCATGGAGGCCGAATTCCTGGGAATGGAGACAAATTCGTCTGGAG
		pGBKT7 AtCCA1-RP	TGCGGCCGCTGCAGGTCGACGGATCCTCATGTGGAAGCTTGAGTTTCC
	AT2G46830	pGADT7 AtCCA1-FP	ATGGAGGCCAGTGAATTCCACCCGGGAATGGAGACAAATTCGTCTGGAG
		pGADT7 AtCCA1-RP	ATCTGCAGCTCGAGCTCGATGGATCCTCATGTGGAAGCTTGAGTTTCC
	Zm00001d024546	pGBKT7 ZmCCA1a-FP	ATCTCAGAGGAGGACCTGCATATGATGGAGGTGAATTCCTCTGGTG
		pGBKT7 ZmCCA1a-RP	CAGCTCGAGCTCGATGGATCCTCATGTTGATGCTTCACTATCAAG
	Zm00001d024546	pGADT7 ZmCCA1a-FP	GTACCAGATTACGCTCATATGATGGAGGTGAATTCCTCTGGTG
		pGADT7 ZmCCA1a-RP	CAGCTCGAGCTCGATGGATCCTCATGTTGATGCTTCACTATCAAG
	Zm00001d049543	pGBKT7 ZmCCA1b-FP	GGCCAGTGAATTCACCCGGGTATGGAGATGAATTCCTCTGGCG
		pGBKT7 ZmCCA1b-RP	CAGCTCGAGCTCGATGGATCCTTATGTGGATGCTTCGCTATCAAG
	Zm00001d024546	ZmCCA1a-ox-FP	TTGGCGGCCATGGAGATGAATTCCTCTGGCG
		ZmCCA1a-ox-RP	CGGGATCCTTATGTGGATGCTTCGCTATCAAG

	Gene ID	Primer Name	Primer Sequence (5' to 3')
For qRT-PCR of corresponding genes	Zm00001d024546	ZmCCA1a-RT-FP	AAAGAAAGTTGCTCGGAAGTTC
		ZmCCA1a-RT-RP	TTGTTTTACTTGCCTCAATCGG
For qRT-PCR of corresponding genes	AT2G46830	AtCCA1-RT -FP	CCGATGCATATCCCTGTGCTC
		AtCCA1-RT -RP	GTGTTCTTGCTCTCGGCTCT
	AT1G01060	AtLHY-RT -FP	TGCAGTTCCAACCTCCAGCAA
		AtLHY-RT -RP	CGCTATACGACCCTCTTCGG
	AT1G22770	AtLGI-RT -FP	CTGTTTAAACTGGAAGCTCAC
		AtGI-RT -RP	GGGACAAGGATATAGTACAGCC
	AT5G15840	AtCO-RT -FP	GGAGATAGAGTTGTTCCGCTTA
		AtCO-RT -RP	CCATGGATGAAATGTATGCGTT
	AT1G65480	AtFT-RT -FP	CTACAACTGGAACAACCTTTGG
		AtFT-RT -RP	TGACAATTGTAGAAAACTGCGG
	AF168884	18S-RT-FP	CCTGCGGCTTAATTGA
		18S-RT-RP	GTTAGCAGGCTGAGGTCTCG
	AT3G18780	ACT2-RT-FP	GAAGTACAGTGTCTGGATCGGTGGTT
		ACT2-RT-RP	ATTCCTGGACCTGCCTCATCATACTC
	AT1G29920	Cab2-RT-FP	CAAGTTTGGAGAGGCAGTTTG
		Cab2-RT-RP	ATCAAAATAACTTGTGTGGCCC