

## Supplementary Material

### **Expression of sugarcane genes associated with perception of photoperiod and floral induction reveals cycling over a 24-hour period**

*Donna Glassop<sup>A,B</sup> and Anne L. Rae<sup>A</sup>*

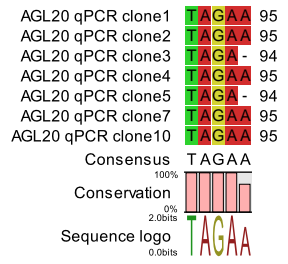
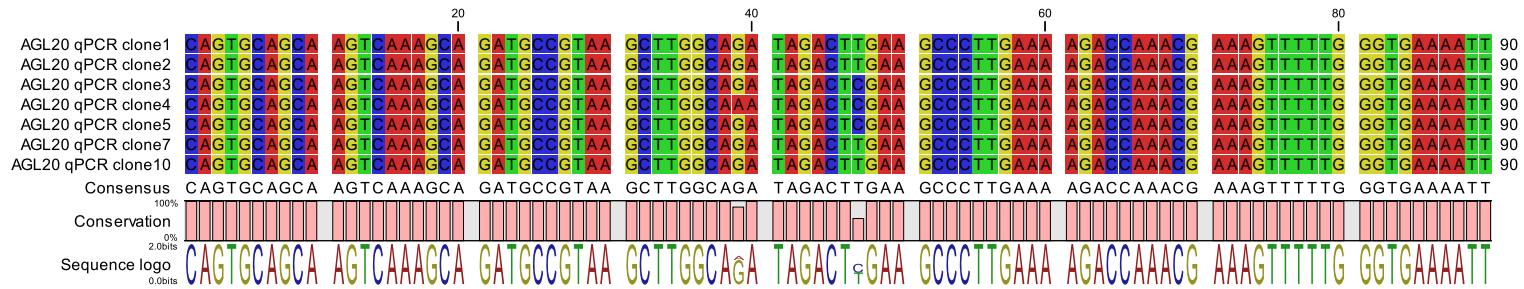
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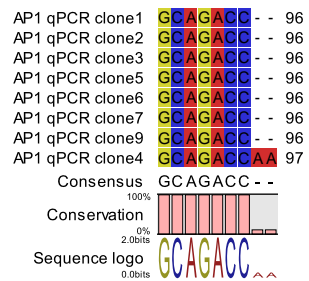
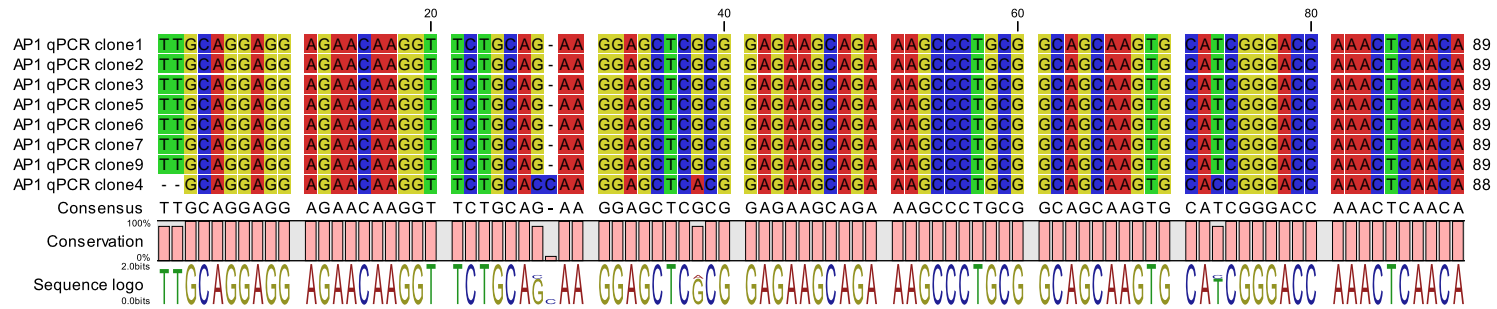
<sup>B</sup>Corresponding author. Email: donna.glassop@csiro.au

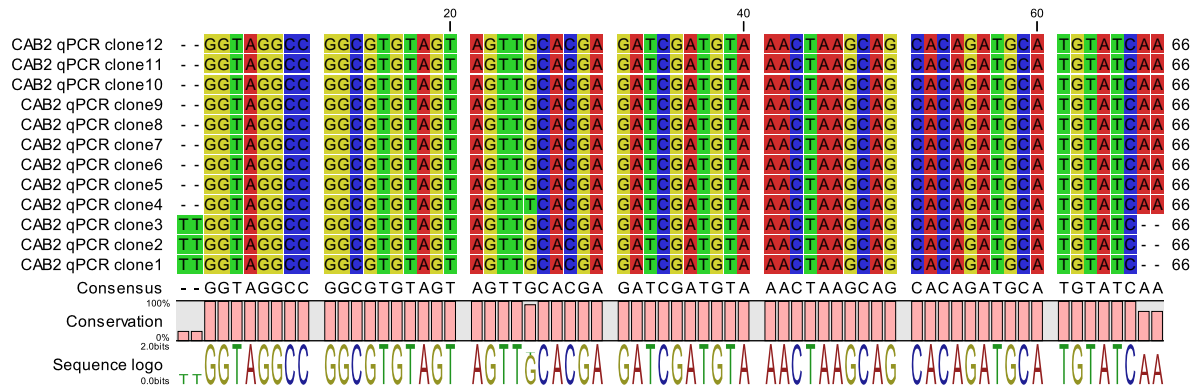
**Fig. S1.** Sequences of qPCR products. qPCR products produced with the primers detailed in Supplementary Table 1 were cloned and 2 – 12 independent clones sequenced to positively confirm that the amplified product arose from the desired sequence. No sequence variation between clones was observed for eight of the qPCR products, with the remaining products having 2 - 5 sequence variants. The consensus sequence, sequence conservation and sequence logo are detailed below the alignment of the sequences.

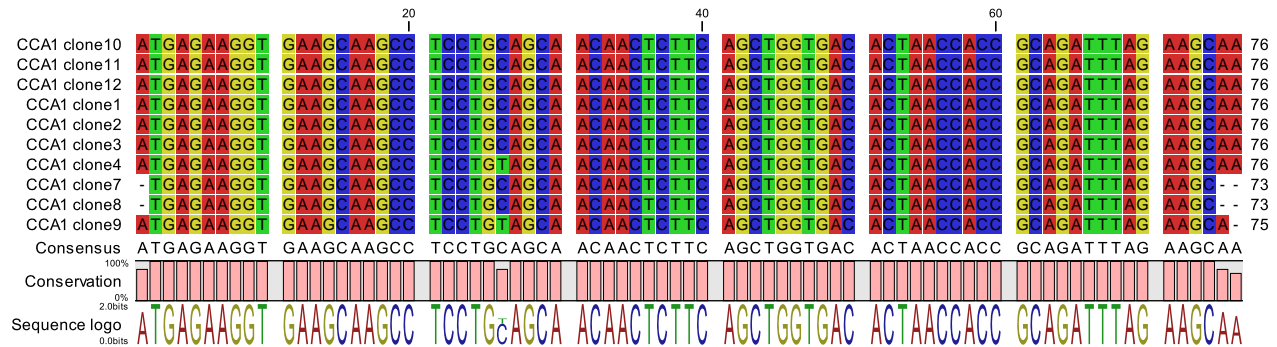
### **Reference**

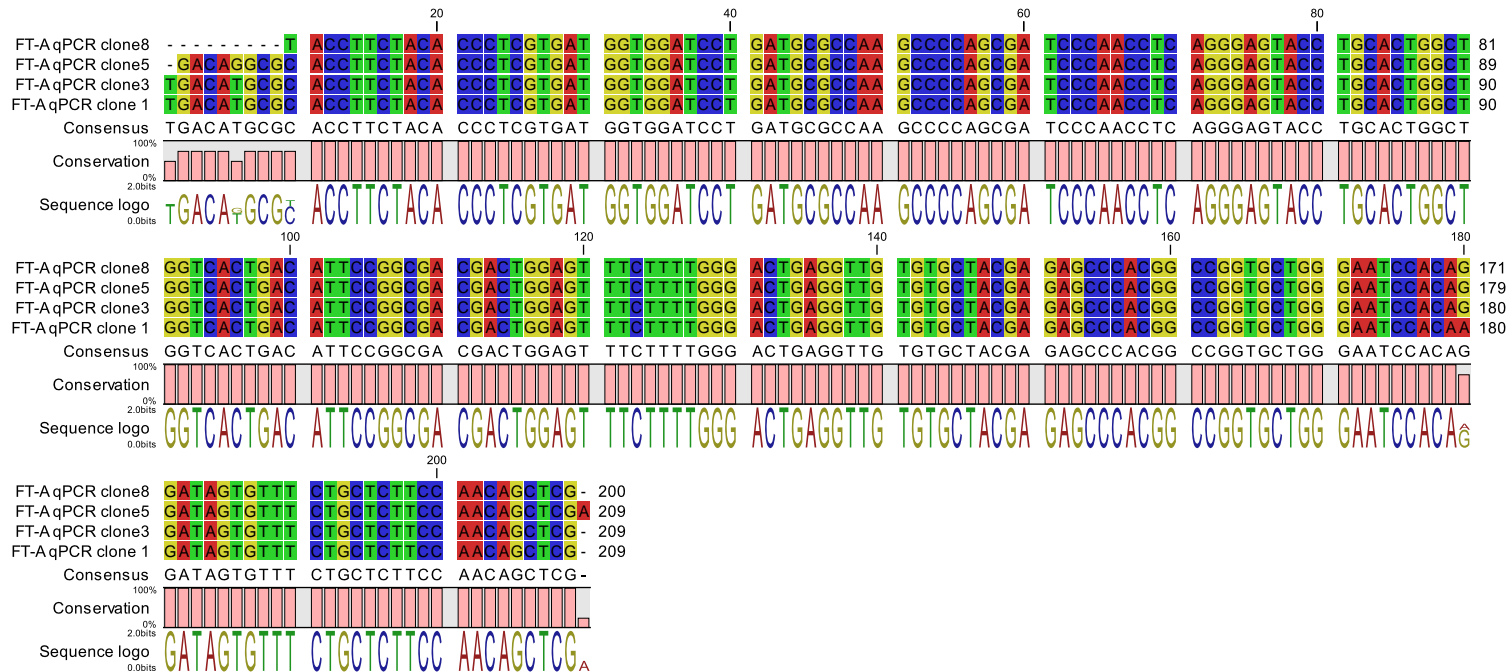
Vettore AL, da Silva FR, Kemper EL, Arruda P (2001) The libraries that made SUCEST. *Genetics and Molecular Biology* **24**, 1–7. doi:10.1590/S1415-47572001000100002











FT-C qPCR clone1 - GGCC TATAC CCTAGTTATG GTGGATCCTG ATGGGCC TAA TCCAGCAAC CCTACCCTAC GGAATACTT GCATTGGATG GTGACTGACA 89  
 FT-C qPCR clone3 - GGCC TATAC CCTAGTTATG GTGGATCCTG ATGGGCC TAA TCCAGCAAC CCTACCCTAC GGAATACTT GCATTGGATG GTGACTGACA 89  
 FT-C qPCR clone4 - GGCC TATAC CCTAGTTATG GTGGATCCTG ATGGGCC TAA TCCAGCAAC CCTACCCTAC GGAATACTT GCATTGGATG GTGACTGACA 89  
 FT-C qPCR clone9 - GGCC TATAC CCTAGTTATG GTGGATCCTG ATGGGCC TAA TCCAGCAAC CCTACCCTAC GGAATACTT GCATTGGATG GTGACTGACA 89  
 FT-C qPCR clone2 - GGCC TATAC CCTAGTTATG GTGGATCCTG ATGGGCC TAA TCCAGCAAC CCTACCCTAC GGAATACTT GCATTGGATG GTGACTGACA 90  
 FT-C qPCR clone5 - GGCC TATAC CCTAGTTATG GTGGATCCTG ATGGGCC TAA TCCAGCAAC CCTACCCTAC GGAATACTT GCATTGGATG GTGACTGACA 89

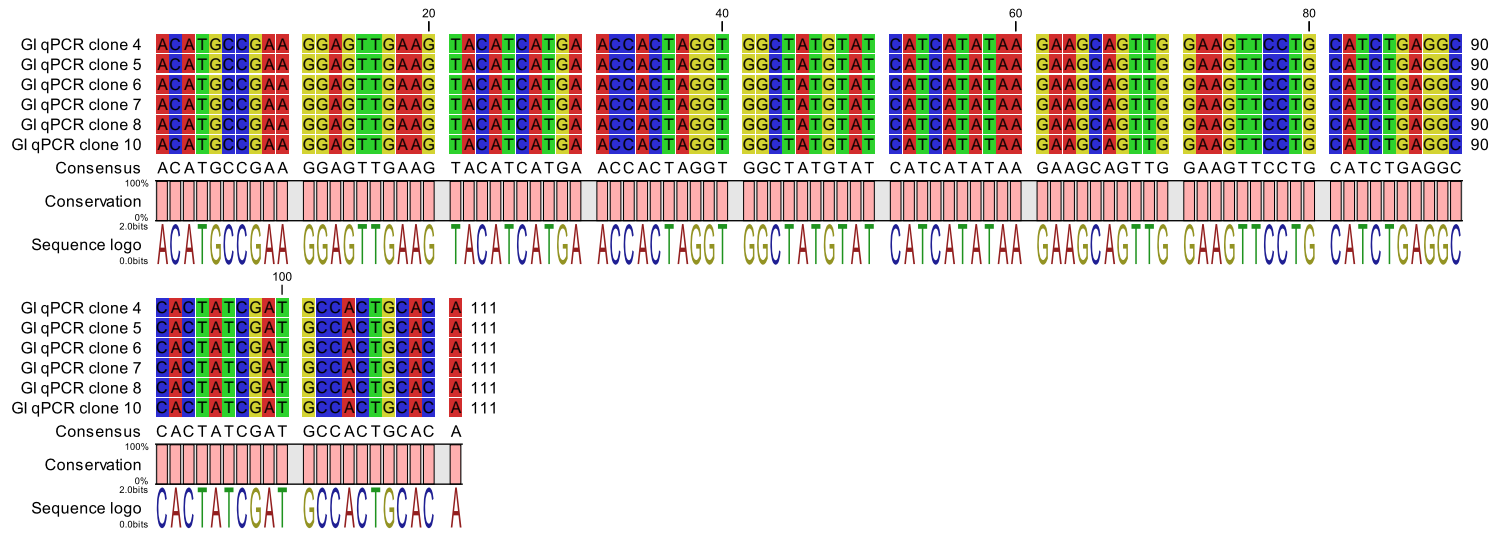
Consensus - GGCC TATAC CCTAGTTATG GTGGATCCTG ATGGGCC TAA TCCAGCAAC CCTACCCTAC GGAATACTT GCATTGGATG GTGACTGACA



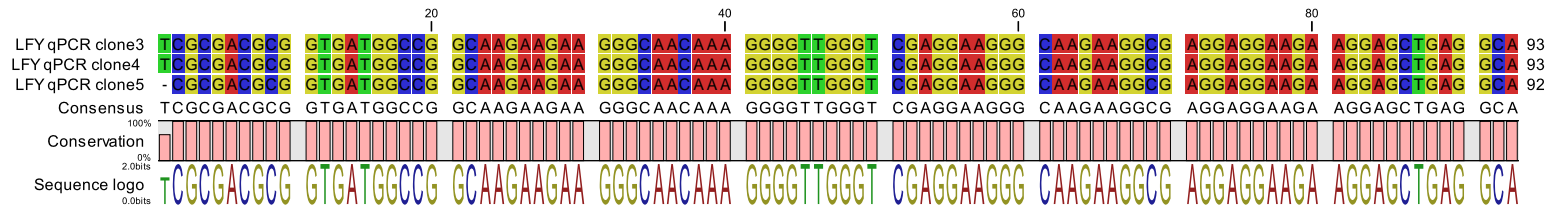
FT-C qPCR clone1 TCCAGCATC AACCGATGAT AGCTTTGGCC GAGAA 124  
 FT-C qPCR clone3 TCCAGCATC AACCGATGAT AGCTTTGGCC GAGAA 124  
 FT-C qPCR clone4 TCCAGCATC AACCGATGAT AGCTTTGGCC GAGAA 124  
 FT-C qPCR clone9 TCCAGCATC AACCGATGAT AGCTTTGGCC GAGAA 124  
 FT-C qPCR clone2 TCCAGCATC AACCGATGAT AGCTTTGGCC GAG - 123  
 FT-C qPCR clone5 TCCAGCATC AACCGATGAT AGCTTTGGCC GAGAA - 123

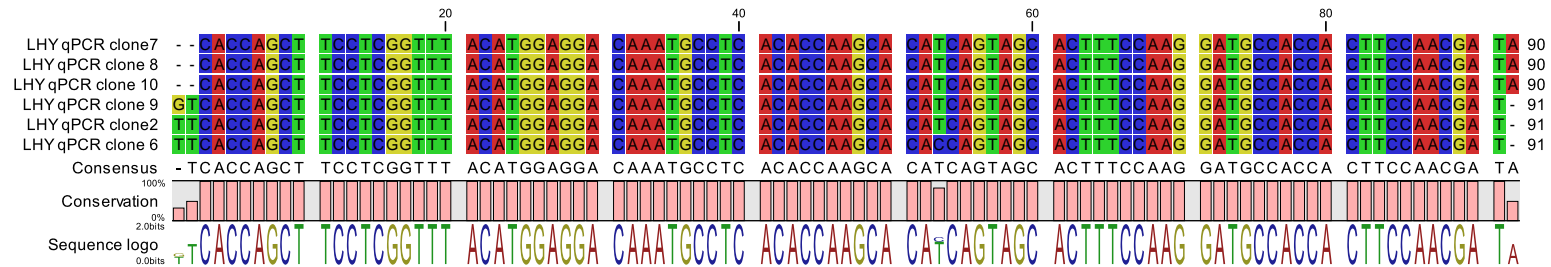
Consensus TCCAGCATC AACCGATGAT AGCTTTGGCC GAGAA

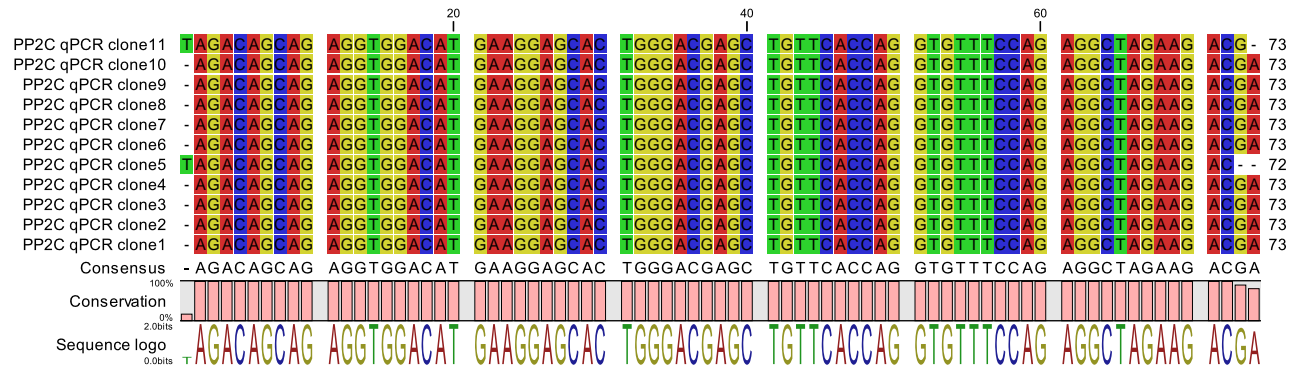


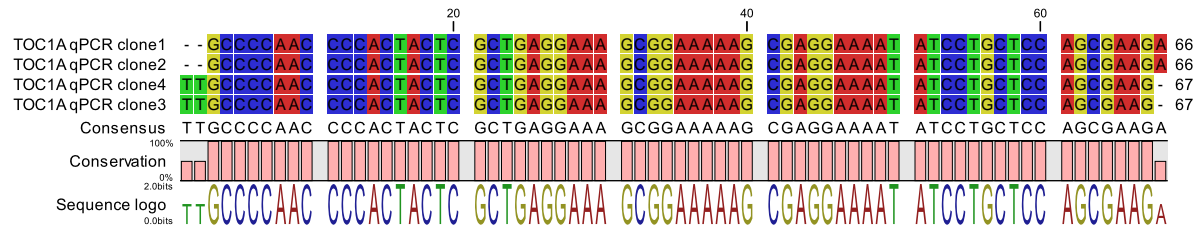


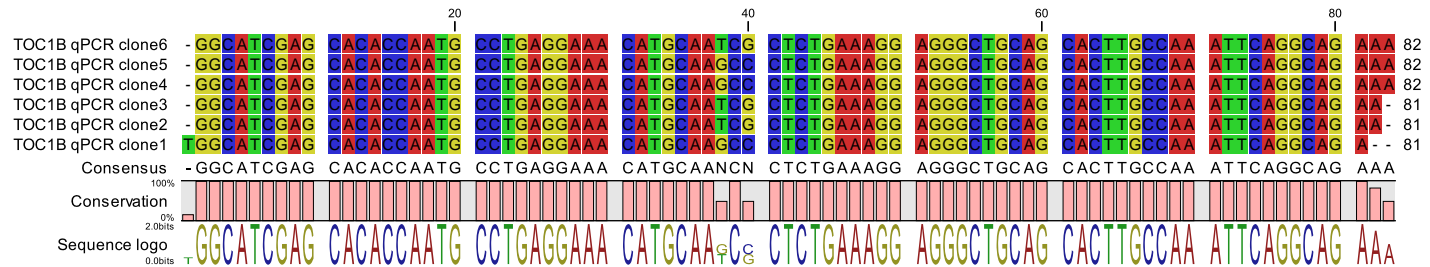






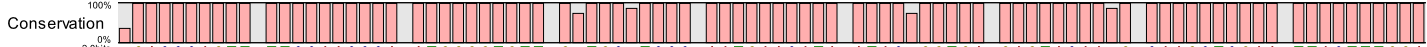






PRR3 qPCR clone8 - GACCCAGTT TTCCAACCCA ATGGGGTGTT GGTGCCCTCCC AATGAACATA ATACAGGTGA GAGTACAAGG CAAGCTCGAA TTACTTTGGA 89  
 PRR3 qPCR clone7 T GACCCAGTT TTCCAACCCA ATGGGGTGTT GGTGCCCTCCC AATGAACATA ATACAGGTGA GAGTACAAGG CAAGCTCGAA TTACTTTGGA 90  
 PRR3 qPCR clone6 - GACCCAGTT TTCCAACCCA ATGGGGTGTT GGTGCCCTCCC AATGAACATA ATACAGGTGA GAGTACAAGG CAAGCTCGAA TTACTTTGGA 89  
 PRR3 qPCR clone5 - GACCCAGTT TTCCAACCCA ATGGGGTGTT GGTGCCCTCCC AATGAACATA ATACAGGTGA GAGTACAAGG CAAGCTCGAA TTACTTTGGA 89  
 PRR3 qPCR clone4 - GACCCAGTT TTCCAACCCA ATGGGGTGTT GGTGCCCTCCC AATGAACATA ATACAGGTGA GAGTACAAGG CAAGCTCGAA TTACTTTGGA 89  
 PRR3 qPCR clone3 T GACCCAGTT TTCCAACCCA ATGGGGTGTT GGTGCCCTCCC AATGAACATA ATACAGGTGA GAGTACAAGG CAAGCTCGAA TTACTTTGGA 90  
 PRR3 qPCR clone2 T GACCCAGTT TTCCAACCCA ATGGGGTGTT GGTGCCCTCCC AATGAACATA ATACAGGTGA GAGTACAAGG CAAGCTCGAA TTACTTTGGA 90  
 PRR3 qPCR clone1 - GACCCAGTT TTCCAACCCA ATGGGGTGTT GGTGCCCTCCC AATGAACATA ATACAGGTGA GAGTACAAGG CAAGCTCGAA TTACTTTGGA 89

Consensus - GACCCAGTT TTCCAACCCA ATGGGGTGTT GGTGCCCTCCC AATGAACATA ATACAGGTGA GAGTACAAGG CAAGCTCGAA TTACTTTGGA



PRR3 qPCR clone8 CAGTAGCACG GAGGGA 105  
 PRR3 qPCR clone7 CAGTAGCACG GAGGGA - 105  
 PRR3 qPCR clone6 CAGTAGCACG GAGGGA 105  
 PRR3 qPCR clone5 CAGTAGCACG GAGGGA 105  
 PRR3 qPCR clone4 CAGTAGCACG GAGGGA 105  
 PRR3 qPCR clone3 CAGTAGCACG GAGGGA - 105  
 PRR3 qPCR clone2 CAGTAGCACG GAGGGA - 105  
 PRR3 qPCR clone1 CAGTAGCACG GAGGGA 105

Consensus CAGTAGCACG GAGGGA



PRR37 qPCR clone1 CAGATCAGTC AGCCTTCACC AGGTACCATATA CATCT -GTGG CTTCCAATCA AGGTGGAGCA AGATGTGGGG AAAGCTCTTC ACCACAAGAT 89  
 PRR37 qPCR clone2 CAGATCAGTC AGCCTTCACC AGGTACCATATA CATCT -GTGG CTTCCAATCA AGGTGGAGCA AGATGTGGGG AAAGCTCTTC ACCACAAGAT 89  
 PRR37 qPCR clone4 CAGATCAGTC AGCCTTCACC AGGTACCATATA CATCT -GTGG CTTCCAATCA AGGTGGAGCA AGATGTGGGG AAAGCTCTTC ACCACAAGAT 89  
 PRR37 qPCR clone5 CAGATCAGTC AGCCTTCACC AGGTACCATATA CATCT -GTGG CTTCCAATCA AGGTGGAGCA AGATGTGGGG AAAGCTCTTC ACCACAAGAT 89  
 PRR37 qPCR clone7 CAGATCAGTC AGCCTTCACC AGGTACCATATA CATCT -GTGG CTTCCAATCA AGGTGGAGCA AGATGTGGGG AAAGCTCTTC ACCACAAGAT 89  
 PRR37 qPCR clone8 CAGATCAGTC AGCCTTCACC AGGTACCATATA CATCT -GTGG CTTCCAATCA AGGTGGAGCA AGATGTGGGG AAAGCTCTTC ACCACAAGAT 89  
 PRR37 qPCR clone10 CAGATCAGTC AGCCTTCACC AGGTACCATATA CATCT -GTGG CTTCCAATCA AGGTGGAGCA AGATGTGGGG AAAGCTCTTC ACCACAAGAT 89  
 PRR37 qPCR clone11 CAGATCAGTC AGCCTTCACC AGGTACCATATA CATCT -GTGG CTTCCAATCA AGGTGGAGCA AGATGTGGGG AAAGCTCTTC ACCACAAGAT 89  
 PRR37 qPCR clone12 CAGATCAGTC AGCCTTCACC AGGTACCATATA CATCT -GTGG CTTCCAATCA AGGTGGAGCA AGATGTGGGG AAAGCTCTTC ACCACAAGAT 89  
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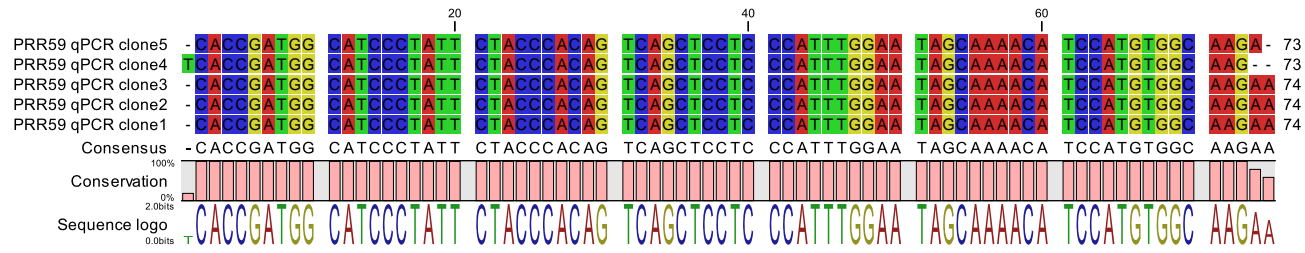
Consensus CAGATCAGTC AGCCTTCACC AGGTACCATATA CATCT -GTGG CTTCCAATCA AGGTGGAGCA AGATGTGGGG AAAGCTCTTC ACCACAAGAT



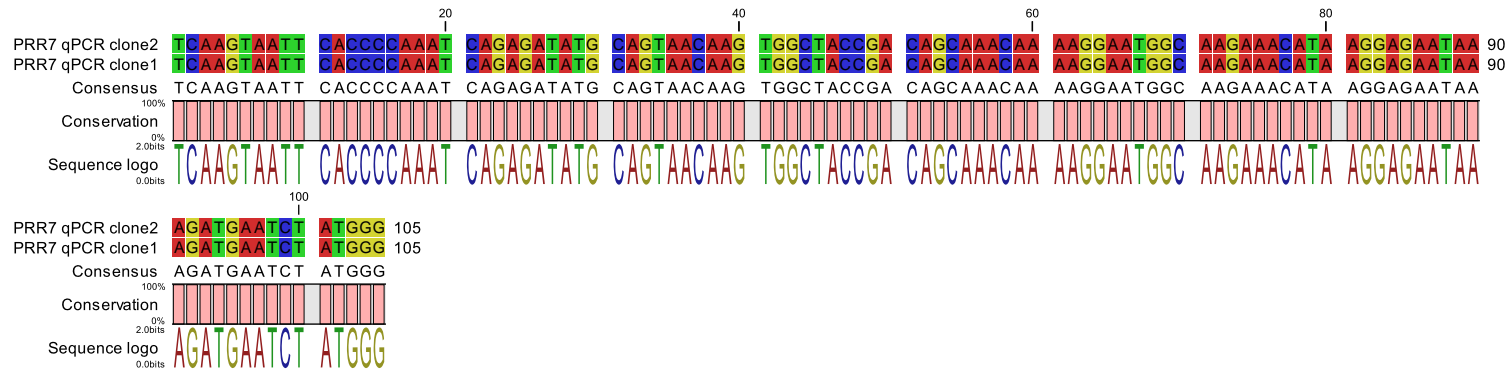
PRR37 qPCR clone1 AACAGTTCTG AGGCTGTGAA AACGGACTCA 119  
 PRR37 qPCR clone2 AACAGTTCTG AGGCTGTGAA AACGGACTCA 119  
 PRR37 qPCR clone4 AACAGTTCTG AGGCTGTGAA AACGGACTCA 119  
 PRR37 qPCR clone5 AACAGTTCTG AGGCTGTGAA AACGGACTCA 119  
 PRR37 qPCR clone7 AACAGTTCTG AGGCTGTGAA AACGGACTCA 119  
 PRR37 qPCR clone8 AACAGTTCTG AGGCTGTGAA AACGGACTCA 119  
 PRR37 qPCR clone10 AACAGTTCTG AGGCTGTGAA AACGGACTCA 119  
 PRR37 qPCR clone11 AACAGTTCTG AGGCTGTGAA AACGGACTCA 119  
 PRR37 qPCR clone12 AACAGTTCTG AGGCTGTGAA AACGGACTCA 119  
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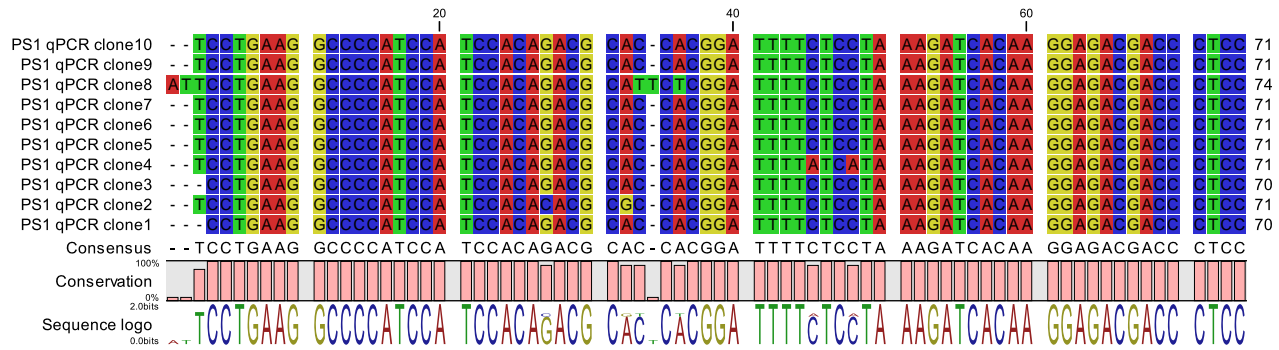
Consensus AACAGTTCTG AGGCTGTGAA AACGGACTCA





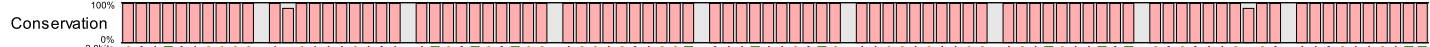






		20		40		60		80		
SOC1 qPCR clone1	G C A T C A G G G G	A A G A A A G A C A	A T G C T G C T G G	A G G A G C A G G T	C A A T A A G C T G	A A G G A G A A G G	A G A T G A A T C T	G G C A A G A G C	A A C G A A G A T T	90
SOC1 qPCR clone3	G C A T C A G G G G	A A G A A A G A C A	A T G C T G C T G G	A G G A G C A G G T	C A A T A A G C T G	A A G G A G A A G G	A G A T G A A T C T	G G C A A G A G C	A A C G A A G A T T	90
SOC1 qPCR clone4	G C A T C A G G G G	A A G A A A G A C A	A T G C T G C T G G	A G G A G C A G G T	C A A T A A G C T G	A A G G A G A A G G	A G A T G A A T C T	G G C A A G A G C	A A C G A A G A T T	90
SOC1 qPCR clone7	G C A T C A G G G G	A A G A A A G A C A	A T G C T G C T G G	A G G A G C A G G T	C A A T A A G C T G	A A G G A G A A G G	A G A T G A A T C T	G G C A A G A G C	A A C G A A G A T T	90
SOC1 qPCR clone8	G C A T C A G G G G	A A G A A A G A C A	A T G C T G C T G G	A G G A G C A G G T	C A A T A A G C T G	A A G G A G A A G G	A G A T G A A T C T	G G C A A G A G C	A A C G A A G A T T	90
SOC1 qPCR clone10	G C A T C A G G G G	A A G A A A G A C A	A T G C T G C T G G	A G G A G C A G G T	C A A T A A G C T G	A A G G A G A A G G	A G A T G A A T C T	G G C A A G A G C	A A C G A A G A T T	90
SOC1 qPCR clone5	G C A T C A G G G G	A A G A A A G A C A	A T G C T G C T G G	A G G A G C A G G T	C A A T A A G C T G	A A G G A G A A G G	A G A T G A A T C T	G G C A A G G G C	A A C G A A G A T T	90
SOC1 qPCR clone9	G C A T C A G G G G	A A G A A A G A C A	A T G C T G C T G G	A G G A G C A G G T	C A A T A A G C T G	A A G G A G A A G G	A G A T G A A T C T	G G C A A G A G C	A A C G A A G A T T	90

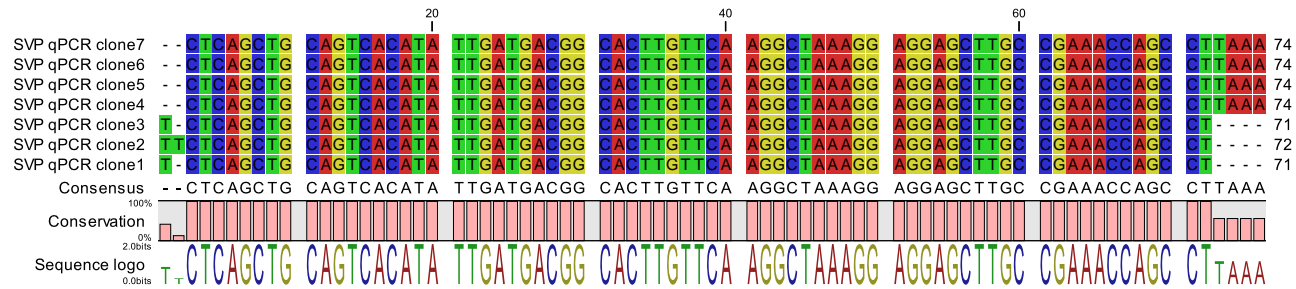
Consensus GCATCAGGGG AAGAAAGACA ATGCTGCTGG AGGAGCAGGT CAATAAGCTG AAGGAGAAGG AGATGAATCT GGCCAAGAGC AACGAAGATT



		100	
SOC1 qPCR clone1	T A C G T G A A A A	G T G C A A G A A G	C A G C C A 116
SOC1 qPCR clone3	T A C G T G A A A A	G T G C A A G A A G	C A G C C A 116
SOC1 qPCR clone4	T A C G T G A A A A	G T G C A A G A A G	C A G C C A 116
SOC1 qPCR clone7	T A C G T G A A A A	G T G C A A G A A G	C A G C C A 116
SOC1 qPCR clone8	T A C G T G A A A A	G T G C A A G A A G	C A G C C A 116
SOC1 qPCR clone10	T A C G T G A A A A	G T G C A A G A A G	C A G C C A 116
SOC1 qPCR clone5	T A C G T G A A A A	G T G C A A G A A G	C A G C C A 116
SOC1 qPCR clone9	T A C G T G A A A A	G T G C A A G A A G	C A G C C A 116

Consensus TACGTGAAAA GTGCAAGAAG CAGCCA





TSFT qPCR clone1 CCACCTCGTT ACCATGATTG GCACCAGCTC CTTCTGGTAT GTCAGTCACC AACCAA TGGA GATACTCCCG TTTGGTCGGG TTGCTTGGGC 90  
 TSFT qPCR clone2 CCACCTCGTT ACCATGATTG GCACCAGCTC CTTCTGGTAT GTCAGTCACC AACCAA TGGA GATACTCCCG TTTGGTCGGG TTGCTTGGGC 90  
 TSFT qPCR clone3 CCACCTCGTT ACCATGATTG GCACCAGCTC CTTCTGGTAT GTCAGTCACC AACCAA TGGA GATACTCCCG TTTGGTCGGG TTGCTTGGGC 90  
 TSFT qPCR clone4 CCACCTCGTT ACCATGATTG GCACCAGCTC CTTCTGGTAT GTCAGTCACC AACCAA TGGA GATACTCCCG TTTGGTCGGG TTGCTTGGGC 90  
 TSFT qPCR clone5 CCACCTCGTT ACCATGATTG GCACCAGCTC CTTCTGGTAT GTCAGTCACC AACCAA TGGA GATACTCCCG TTTGGTCGGG TTGCTTGGGC 90  
 TSFT qPCR clone6 CCACCTCGTT ACCATGATTG GCACCAGCTC CTTCTGGTAT GTCAGTCACC AACCAA TGGA GATACTCCCG TTTGGTCGGG TTGCTTGGGC 90  
 TSFT qPCR clone7 CCACCTCGTT ACCATGATTG GCACCAGCTC CTTCTGGTAT GTCAGTCACC AACCAA TGGA GATACTCCCG TTTGGTCGGG TTGCTTGGGC 90  
 TSFT qPCR clone9 CCACCTCGTT ACCATGATTG GCACCAGCTC CTTCTGGTAT GTCAGTCACC AACCAA TGGA GATACTCCCG TTTGGTCGGG TTGCTTGGGC 90

Consensus CCACCTCGTT ACCATGATTG GCACCAGCTC CTTCTGGTAT GTCAGTCACC AACCAA TGGA GATACTCCCG TTTGGTCGGG TTGCTTGGGC



Sequence logo CCACCTCGTT ACCATGATTG GCACCAGCTC CTTCTGGTAT GTCAGTCACC AACCAA TGGA GATACTCCCG TTTGGTCGGG TTGCTTGGGC

TSFT qPCR clone1 TAGGGGCATC AGGGTCCAGC ATCACCAGTG TGTATAACGC CA 132  
 TSFT qPCR clone2 TAGGGGCATC AGGGTCCAGC ATCACCAGTG TGTATAACGC CA 132  
 TSFT qPCR clone3 TAGGGGCATC AGGGTCCAGC ATCACCAGTG TGTATAACGC CA 132  
 TSFT qPCR clone4 TAGGGGCATC AGGGTCCAGC ATCACCAGTG TGTATAACGC CA 132  
 TSFT qPCR clone5 TAGGGGCATC AGGGTCCAGC ATCACCAGTG TGTATAACGC CA 132  
 TSFT qPCR clone6 TAGGGGCATC AGGGTCCAGC ATCACCAGTG TGTATAACGC CA 132  
 TSFT qPCR clone7 TAGGGGCATC AGGGTCCAGC ATCACCAGTG TGTATAACGC CA 132  
 TSFT qPCR clone9 TAGGGGCATC AGGGTCCAGC ATCACCAGTG TGTATAACGC CA 132

Consensus TAGGGGCATC AGGGTCCAGC ATCACCAGTG TGTATAACGC CA



Sequence logo TAGGGGCATC AGGGTCCAGC ATCACCAGTG TGTATAACGC CA

**Table S1. Genes associated with the perception of photoperiod and floral induction in sugarcane.** Primers are written 5' to 3' and references (Ref) provided for previously published primers.

	Gene	Sugarcane accession	Sorghum accession <sup>a</sup>	Forward primer	Reverse primer	R ef
1	AGL20	SCSBAM10 88B05 <sup>b</sup>	Sobic.001G3 14400	tacagtgcagcaagtcaa agc	tctaaatttcacccaaa actttc	<sup>e</sup>
2	AP1	TC134443 <sup>c</sup>	Sobic.001G0 86500	tcgaggaggagaacaa gggt	tggtctgctgttgagtt gg	<sup>e</sup>
3	CAB2	SCUTST308 6G11 <sup>b</sup>	Sobic.001G1 77000	tgatacatgcatctgtgct gctt	tggtaggccggcgtgt ag	<sup>f</sup>
4	CCA1	SCACLV102 3E11 <sup>b</sup>	Sobic.007G0 47400	atgagaaggtgaagcaa gcct	tgcttctaaatctgcggg ggt	
5	FT-A	SCSFSD106 7A08 <sup>b</sup>	Sobic.003G0 17200	gacatgcgcaccttctac a	cgagctgttgaagag caga	<sup>e</sup>
	FT-C	SCCCRZ100 3F09 <sup>b</sup>	Sobic.010G16 4200	ggcctataccctagttatg at	tctcggccaaagctatc at	<sup>e</sup>
6	GHD7/M a6		Sobic.006G0 04400	ctcaccttgagggtgatg c	gtcagggttggtcctt gag	
7	GI	SCELB2070 C07 <sup>b</sup>	Sobic.003G0 40900	acatgccgaaggagttg aag	gtgcagtggcatcgata gtg	
8	LFY	SCJFFL1C0 6B03 <sup>b</sup>	Sobic.006G2 01600	cgcgacgcggtgatg gcctcagctccttcttc	gcctcagctccttcttc tc	
9	LHY	SCEZSB109 3G09 <sup>b</sup>	Sobic.006G1 92100	tcaccagcttctcggttt a	atcgttgaagtgggg c	
10	PHYB/M a3		Sobic.001G3 94400	gcctatattgccaggag a	cttgacatctgttctc a	
11	PP2C	SCEPRZ101 0E06 <sup>b</sup>	Sobic.009G2 13000	agacagcagaggtgga catgaa	cgtcttctagcctctgga aaca	<sup>f</sup>
12	PRR1/T	TC124158 <sup>c</sup>	Sobic.004G2 16700	gagcctgaccagagaga caagat	catatgctagaaatgca gacgac	
	OC1* TOC1-a*	SCCCSB100 2H04 <sup>b</sup>	Sobic.004G2 16700	tgccccaacccactact c	cttcgctggagcaggat atatt	<sup>f</sup>

	TOC1-b*	SCEPLB104	Sobic.004G2	ggcatcgagcacaccaa	ttctgcctgaatttgca	<sup>f</sup>
		2B08	16700	tgc	agtg	
1	PRR3	SCACLR105	Sobic.005G0	gaccagttttccaacc	ccctcctgctactgtc	<sup>f</sup>
3		7G02 <sup>b</sup>	44400	aat	caa	
1	PRR37/	TC121913 <sup>c</sup>	JF801178	– tcaaaaggtgctgttgact	tgcgtctgaatgccactt	
4	Ma1		90 <sup>d</sup>	t	tc	
			Sobic.006G0			
			57866			
1	PRR59	SCCCLR107	Sobic.002G2	caccgatggcatccctat	tcttgccacatggatgtt	<sup>f</sup>
5		7F09 <sup>b</sup>	75100	tc	ttg	
1	PRR7/73	SCACLR105	Sobic.001G4	caagtaattcaccctaaa	tcccatagattcatcttta	<sup>f</sup>
6		7C07 <sup>b</sup>	11400	tcagagata	ttctccttat	
1	PS1	SCQGLR202	Sobic.003G0	cctgaaggcccatccat	ggagggtcgtctccttg	<sup>f</sup>
7		5B12 <sup>b</sup>	52500		tga	
1	SOC1	TC135043 <sup>c</sup>	Sobic.001G5	gcatcaggggaagaaa	ggctgcttcttgcactttt	
8			26800	gaca	c	
1	SVP	TC121911 <sup>c</sup>	Sobic.001G4	tctcagctgcagtcacat	ttaaggctggtttgagc	<sup>e</sup>
9			78400		a	
2	TF1	CF571229 <sup>c</sup>	Sobic.008G0	gggtgattggagaagtc	tgaagaaagaccgcaa	<sup>e</sup>
0			37300		gt	
2	TSFT	TC123488 <sup>c</sup>	Sobic.008G0	ggcgttatacacactggt	gcaccagctccttctgg	<sup>e</sup>
1			82200	ga	tat	

<sup>a</sup> Phytozome v11.0

<sup>b</sup> SUCEST (Vettore *et al.* 2001)

<sup>c</sup> (Casu *et al.* 2007)

<sup>d</sup> (Murphy *et al.* 2011)

<sup>e</sup> (Glassop *et al.* 2014a)

<sup>f</sup> (Hotta *et al.* 2013)

\* PRR1/TOC1, TOC1-a and TOC1-b all align to the same sorghum gene locus; though in sugarcane they may be different genes.