

**Table S1. Primer pares used for the manipulation of *FsBmh1* and *FsBmh2* in *F. sacchari* and the identification of their mutants.**

Primers	Sequence(5'-3')	Purpose
FsBmh1-A/B	GTGAAGAGCGATTGTCCATTGTTGG/CACAGGTCACAGTCACCTCATC	<i>FsBmh1</i> full-length clone
FsBmh2-A/B	CACAAGCTCCGCAGTAGGTATCTG/CCAGGTTACTCAATCGTCGCAC	<i>FsBmh2</i> full-length clone
FsBmh1-1F/R	TGGTTGATGGCACTGGCAGT/TCTTTCTAGAGGATCCCCGGGTACCGCGACTGTGT TTCAGGACAGT	Cloning of <i>FsBmh1</i> 5'
FsBmh2-1F/R	ATGGCACTGTGCGTTGTCTTG/AGTACAATCTGCTCTGATGCCGATTCTTAGACGAG CTGAAC	Cloning of <i>FsBmh2</i> 5'
FsBmh1-2F/R	ATATCATCTTCTGTGACCTGCAGGCTGATTTGTCTATGCAGGTGTC/TCCTCTGTCT GCTTCACAGTC	Cloning of <i>FsBmh1</i> 3'
FsBmh2-2F/R	CTTCAATATCATCTTCTGTGCTAGGAACCGAGACGTATTCT/CAGGTACGAGAGACT ATCAC	Cloning of <i>FsBmh2</i> 3'
Hph-F/R	CGGTACCCGGGGATCCTCTAG/GCCTGCAGGTCGACAGAAGATG	<i>Hph</i> full-length clone
G418- F/R	GGCATCAGAGCAGATTGTACT/CGACAGAAGATGATATTGAAG	<i>G418</i> full-length clone
Hph-F0/R0	TGGGCTGATCTGACCAGTTGCC/CACCAGCCCTGGGTTCGCAAAG	Detection of $\Delta$ FsBmh1
G418- F0/R0	GGTATGACCGGGTCGTTTAC/ATTCCGTCACCAGCCCTGGG	Detection of $\Delta$ FsBmh2
C-FsBmh1-F/R	GAATTCTCTTAGACAACGATGTCAGCAAATC/AGCGTTAACTTCACAGGTCACAGT CACCTCATC	Vector for C-FsBmh1
C-FsBmh2-F/R	GTTAACAAGCTTGCGGCCGAGAGATTGGCGTCAACTGCC/TCATCTTCTGTGCGAC GAATTCTTTGCCACACCTCCATCACC	Vector for C-FsBmh2
s-FsBmh1-1F/R	TTAGAGGTACGCGGCCGCATGGGTACGAAGACGCCGT/CTTGCTCACCATGCGG CCGGGCAAGACCCAGGCGGATA	<i>FsBmh1</i> -sense repeat
s-FsBmh1-2F/R	AGGTCAGCATGCGTTAATCATGGGTACGAAGACGCCGT/GAGCGCACCATCTTCG TTGGGCAAGACCCAGGCGGATA	<i>FsBmh1</i> -antisense repeat
s-FsBmh2-1F/R	TTAGAGGTACGCGGCCGCGCCAGGATGTTCTCGATGTC/CTTGCTCACCATGCGGC CTTAGGAGGCAGCAGCAGGCG	<i>FsBmh2</i> -sense repeat
s-FsBmh2-2F/R	AGGTCAGCATGCGTTAACGCCAGGATGTTCTCGATGTC/GAGCGCACCATCTTCGT TTTAGGAGGCAGCAGCAGGCG	<i>FsBmh2</i> -antisense repeat
O-FsBmh1-F/R	TACTACTTTTAGAGGTACGCATGGGTACGAAGACGCCGT/AGATCAGGTCAGCAT GCGTTTACTCGGCCTTAGGCTCCT	Construction of plasmid for O-FsBmh1
O-FsBmh2-F/R	TACTACTTTTAGAGGTACGCATGGTATCGCTGACATCGTA/AGATCAGGTCAGCATG CGTTTTAGGAGGCAGCAGCAGGC	Construction of plasmid for O-FsBmh2