

Table S1. Putative transcriptional factor (TF) binding sites and their positions in the promoters of *De18* and *de18*.

<i>De18</i>		<i>de18</i>		
TF	Site	TF	Site	
Dof core	-86	Dof core	-139	
	-148		-231	
	-173		-293	
	-189		-464	
	-207		-475	
	-319		-497	
	-330		-582	
	-345		-725	
	-354		-749	
	-379		-757	
	-467		-1130	
	-493		Opaque-2	-422
	-590			-559
	-733			-1150
-757	Q-element	-622		
-765				
-1030				
-1131				
-1142				
Opaque-2	-277			
	-531			
	-567			
Q-element	-630			

Table S2. Primers and gene accession numbers for qRT-PCR.

Gene Name	Accession #	Forward Primer	Reverse Primer
<i>Mn1</i>	AF165179	ACGGACATCTCGAACGGCAAGATA	CGTTCATGACCGGCTTCTTCATCT
<i>ZmTar1</i>	BT016739	ACTCTCAACTTCGTGCCGCTAAGA	CCTTGTTGTAGCGAAGCCATGCAA
<i>ZmAlliin1</i>	EU968410	GCTACTGCAACTTCGCCAAGCAAA	GTTGTCCCTGTCCAGCATGTTGAT
<i>ZmVt2</i>	BT085859	TGGCCAAGTTCATCGAGCTCAACA	TTCCTTGGTGAAGTTGCAGAAGGC
<i>ZmYuc1</i>	DQ995287	TTATCCGTAGCCCGGTGCATGTTA	TCCACTGTGTTTCCTCTGATGCGA
<i>ZmARF28</i>	HM004543	TGAGCCTTGTTTCAGAAGCTACCCA	TAGACGACCAACCAGTTCCTGCAA

Table S3. Overlapping primers used for *Yuc* gene amplification of *De18* genotypes (B37, B73 and A69Y) and *de18* mutant.

NAME	SEQUENCE	AMPLICON LENGTH
YUC1F YUC1R	GCCCCCTAGCAAAAAGAAAA GCCTCATGCCCAAGTAAATC	278 bp
YUC2F YUC2R	ACCTTCCCGTGAAACTTGTG TGTGCCAACGTCTAGGACAG	152 bp
YUC3F YUC3R	TCGCATCAGAGGAAACACAG CCTGCCAGAGCATTTTTGAT	280 bp
YUC4F YUC4R	GTGGGAGCTTGCTAGACGAC ATTCTTCACTCCGTCCATGC	271 bp
YUC_EX1F YUC_EX1R	GAGAAGGTGCTAGTTCTGATCGTT GACCAAGAACCTGGTCGTGTACT	402 bp
YUC_EX1INT1F YUC_EX1INT1R	CAGAGCGCGTGACCTAGC TGTTATATGTGTGCCTGTAGATATGC	412 bp
YUC_EX3INT3F YUC_EX3INT3R	CTGGCGATATCAAGGTGAGC ATGCGTGCGTGTAACAACACT	461 bp

Table S4. Primers used for *yuc* promoter amplification of *De18* and *de18* maize genotypes.

NAME	SEQUENCE	AMPLICON LENGTH	TARGET DNA
YUC_PROM_UP4_F YUC_PROM_UP4_R	TGCTTCATCCTGCTCCCTAT GGCGTATTGGATATGGCAGT	492 bp	<i>De18</i> and <i>de18</i>
YUC_PROM_UP3_F YUC_PROM_UP3_R	CACATCAACTTGACGGAAGG CAGCCCCTGAGCATTGTATT	335 bp	<i>De18</i> and <i>de18</i>
YUCPROM_UP F YUCPROM_UP R	GAACAAAAGGATCTCTAGCCACA TGTGGGGTTCCATTCAAAGT	314 bp	<i>De18</i>
YUCPROM_DOWN F YUCPROM_DOWN R	TGGAACCCCACTAAGGTT TGGATGGGAAAGATGTTGGT	500 bp	<i>De18</i>
YUCPROM3 F YUCPROM3 R	AAGGCACACGAGAATTTGATCT ACTCATTGCTAGAACAACCACA	278 bp	<i>de18</i>
YUC_PROM_UP2_F YUC_PROM_UP2_R	ATGGGAGCATAAGGTGTTGC TGTCATTAATTGAGGTGGATGG	352 bp	<i>de18</i>
YUCPROM1 F YUCPROM1 R	GGAAGATTCCATCCACCTCA GGGCTATGTGCATTGACGTAT	249 bp	<i>de18</i>
YUCTATA F YUCTATA R	AATGCACATAGCCCTGCTGT GCACCAACGATCAGAACTAGC	158 bp	<i>de18</i>

Figure S1. (A) cDNA sequences of the two *Yuc1* alleles in *De18* and *de18* endosperm, and (B) predicted amino acid sequences for the YUCCA protein in *De18* and *de18* endosperm (*ZmYuc1-De18* is 400aa and *ZmYuc1-de18* is 212aa).

(A)

<i>ZmYuc1-De18</i>	ATGACGGAGAAGGTGCTAGTTCTGATCGTTGGTGCAGGTCCATCAGGCCTTGCTGTAGCA	60
<i>ZmYuc1-de18</i>	ATGACGGAGAAGGTGCTAGTTCTGATCGTTGGCGCAGGTCCATCAGGCCTTGCTGTAGCA	60

<i>ZmYuc1-De18</i>	GCATGCCTCGGCGAGCACGGCATCCCGTACCACATTGTGGAGCGCGAGGACTGCAGCGCT	120
<i>ZmYuc1-de18</i>	GCATGCCTCGGCGAGCACGGCGTCCCGTACCACATTGTGGAGCGCGAGGACTGCAGCGCT	120

<i>ZmYuc1-De18</i>	TCGCTGTGGCGCAAACGCACGTACGATCGCCTCAAACCTCCACCTCGCCAAGGAGTTCTGC	180
<i>ZmYuc1-de18</i>	TCGCTGTGGCGCAAACGCACGTACGATCGCCTCAAACCTCCACCTCGCCAAGGAGTTCTGC	180

<i>ZmYuc1-De18</i>	GAGCTCCCTCGCATGTGCGATCCGAGCGACGCCCCAAGTACATCACGAGGGAGCAGTTC	240
<i>ZmYuc1-de18</i>	GAGCTCCCTCGCATGTGCGATCCGAGCGACGCCCCAAGTACATCACGAGGGAGCAGTTC	240

<i>ZmYuc1-De18</i>	GTGAGGTACGTCGACGACTACGTCGAGCGCTTCAACATCCTCCCCAGGTACAGCACCTCG	300
<i>ZmYuc1-de18</i>	GTGAGGTACGTCGACGACTACGTCGAGCGCTTCAACATCCTCCCCAGGTACAGCACCTCG	300

<i>ZmYuc1-De18</i>	GTCGAGTCCTGCGAGTACGACGAGGCCAGCGGCCGCTGGGACGTCAGAGCGCGTGACCTA	360
<i>ZmYuc1-de18</i>	GTCGAGTCCTGCGAGTACGACGAGGCCAGCGGCCGCTGGGACGTCAGAGCGCGTGACCTA	360

<i>ZmYuc1-De18</i>	GCGGACGGCGGGCGGCCGAGTGGCCGAGTACACGGCCAGGTTCTTGGTCGTAGCCACCGGC	420
<i>ZmYuc1-de18</i>	GCGGACGGCGGGCGGCCGAGTGGCCGAGTACACGACCAGGTTCTTGGTCGTAGCCACCGGC	420

<i>ZmYuc1-De18</i>	GAGAACTGCGAGGGTGTGCATCCCGGATATCCCTGGCCTGCGCGATTTCCCGGCTGGTGAG	480
<i>ZmYuc1-de18</i>	GAGAACTGCGAGGGAGTGCATCCCGGATATCCCTGGGCTGCGCGATTTCCCGGCTGGTGAG	480

<i>ZmYuc1-De18</i>	GTCGTGCACTCGTCGAGCTACAAATCGTGGAAGAACTATGCCGGGAAGAGAG--TCCTGG	538
<i>ZmYuc1-de18</i>	GTCGTGCACTCGTCGAGCTACAAGTCGTGGAAGAACTATGCCGGGAAGAGAG AG TCCTGG	540

<i>ZmYuc1-De18</i>	TGGTTGGGTGTGGCAACTCTGGCATGGAGATTGCATATGATCTTGCCTACAATGGAGTGG	598
<i>ZmYuc1-de18</i>	TGGTTGGGTGTGGCAACTCTGGCATGGAGATTGCATATGATCTTGCCTACAATGGAGTGG	600

<i>ZmYuc1-De18</i>	AAACCTCCTTGGTTATCCGTAGCCCGGTGCATGTTATGACCAAGGGTCTGATTTACTTGG	658
<i>ZmYuc1-de18</i>	AAACCTCCTTGGTTATCCGTAGCCCGGTGCATGTTATGACCAAGGGTCTGATTTACTTGG	660

<i>ZmYuc1-De18</i>	GCATGATGCTGCTGAAATGGCACCTTCCCTGTGAAACTTGTGGACTTCATCATCTTGACCT	718
<i>ZmYuc1-de18</i>	GCATGAGGCTGCTGAAATGGCACCTTCCCGTAAACTTGTGGACTTCATCATCTTGACCT	720

<i>ZmYuc1-De18</i>	TGGCAAACATCCAGTTCGGTGACCTCTCCCGGTTCCGGCATAGTCAGGCCCGACATGGGCC	778
<i>ZmYuc1-de18</i>	TGGCAAACATCCAGTTCGGTGACCTCTCCCGCTACGGCATAGTCAGGCCCGACATGGGCC	780

<i>ZmYuc1-De18</i>	CGCTTCTTCTCAAGGCCAAGACTGGCAGGTGAGCGGTCTTAGACGTTGGCACAACCCAGT	838
<i>ZmYuc1-de18</i>	CGCTTCTTCTCAAGGCCAAGACTGGCCGGTGGCGGTCTTAGACGTTGGCACAACCCAGT	840

ZmYuc1-De18 TAATAAAGACTGGCGATATCAAGGTGGTTGGGGCAATATCTCGCATCAGAGGAAACACAG 898
ZmYuc1-de18 TAATAAAGACGGGCGATATCAAGGTGGTTGGGGCGATATCTCGCATCAGAGGAAACACAG 900

ZmYuc1-De18 TGGAGTTCGAGGATGGGAAGGAGAGGGACTTCGATTCTCTCGTGTTCGCAACAGGATACA 958
ZmYuc1-de18 TGGAGTTCGAGGATGGGAAGGAGAGGGACTTCGATTCTCTCGTGTTCGCAACAGGATACA 960

ZmYuc1-De18 GAAGCACTGCGAACACGTGGCTTAAGGACGGTGGGAGCTTGCTAGACGACAATGGCATGC 1018
ZmYuc1-de18 GAAGCACTGCGAACACGTGGCTTAAGGACGGTGGGAGCTTGCTAGACGACAATGGCATGC 1020

ZmYuc1-De18 CGAAGAAGAAGAAGGCCGGGCGCAGCAGCAGGGCAGTCGGCCATGGAAGGGCGGCAACG 1078
ZmYuc1-de18 CGAAGAAGAAG---GCGGGGCTGCAGCAG---GGCAGTCGTCCATGGAAGGGCGGCAACG 1074

ZmYuc1-De18 GGCTCTACTGCGTTGGGCTGGGGATGGCTGGACTGGCTGGCATCTCTCGTGACGCAGTGA 1138
ZmYuc1-de18 GGCTCTACTGCGTTGGGCTGGGGATGGCTGGACTGGCTGGCATCTCTCGTGACGCAGTGA 1134

ZmYuc1-De18 GCGTTGCTGCGGACATCAAGGCCGCGGTGGATTCCATGGTGGGGCCGCCGGCGTTCTGGT 1198
ZmYuc1-de18 GCGTTGCTGCGGACATCAAGGCCGCGGTGGATTCCATGGTGGGGCCGCCGGCGTTCTGGT 1194

ZmYuc1-De18 TCTGA 1203
ZmYuc1-de18 TCTGA 1199

(B)

ZmYuc1-De18 MTEKVLVLIIVGAGPSGLAVAACLGEHGIYPYHIVEREDCSASLWRKRTYDRLKLHLAKEFC 60
ZmYuc1-de18 MTEKVLVLIIVGAGPSGLAVAACLGEHGVPHYHIVEREDCSASLWRKRTYDRLKLHLAKEFC 60

ZmYuc1-De18 ELPRMSHPSDAPKYITREQFVRYVDDYVERFNILPRYSTSVESCEYDEASGRWDVRRDL 120
ZmYuc1-de18 ELPRMSHPSDAPKYITREQFVRYVDDYVERFNILPRYSTSVESCEYDEASGRWDVRRDL 120

ZmYuc1-De18 ADGGGRVAEYRTARFLVVATGENCEGVIPIPLRDFPAGEVHSSSYKSWKNYAGKRVLV 180
ZmYuc1-de18 ADGGGRVAEYTRFLVVATGENCEGVIPIPLRDFPAGEVHSSSYKSWKNYAGKR--- 177

ZmYuc1-De18 VGCGNSGMEIAYDLAYNGVETSLVIRSPVHVMTKGLIYLGMLLKWHLPVKLVDFIILTL 240
ZmYuc1-de18 -----ES-----WWLGVATLAWRLHMILP----- 196
 *: **: * *: * : *

ZmYuc1-De18 ANIQFGDLSRFGIVRPMGPLLLKAKTGRSAVLVVGTTQLIKTGDIKVVGAISRIRGNTV 300
ZmYuc1-de18 -----TM 198
 *:

ZmYuc1-De18 EFEDGKERDFDSL VFATGYRSTANTWLKDGGSLLDDNGMPKKKAGPQQQGSRPWKGGNG 360
ZmYuc1-de18 EWKP-----PWSVARCML----- 212
 *: : . ** . . : *

ZmYuc1-De18 LYCVGLGMAGLAGISRDAVSVAADIKAAVDSMVGPFAFWF 400
ZmYuc1-de18 -----

Figure S2. Promoter region of 1491bp of the *Yuc1* gene. Single nucleotide polymorphisms in *de18* compared to *De18* (B37) are marked by asterisks. Deletion and insertion were pointed out by broken lines.

	- 1491							
promoter_B37	TGCTTCATCC	TGCTCCCTAT	TATATTTTCA	GGTGGAGATC	AAGAGAGAAT	CACTTCTTAT	CGATCCCTCC	
promoter_de18	TGCTTCATCC	TGCTCCCTAT	TATATTTCCA	GTTGGAGATC	AAGAGAGAAT	CACTTCTTAT	CAATCCCTCC	*
	- 1421							
promoter_B37	TAGGAAACCA	TTGAAATCAC	TCCATTGGAG	AATCAAGGAG	CAGAATTCAA	GAATCAATCA	GACAGCGGAG	
promoter_de18	TAGGAAACCA	TTGAAATCAC	TCCATTGGAG	AATCAAGGAG	CAGAATTCAA	GAATCAATCA	GAATTCGGAG	*
	- 1351							
promoter_B37	TTCTCCCAA	CAAGGCCTAA	TAATGGACAT	GTTACAAGAT	GGTGAGGTCC	TCTTAGATAT	TATACCTTCT	
promoter_de18	TTCTCCCAA	CAAGGCCTAA	TAATAGACAT	GTTACAATAT	GATTAATTCC	TCTTAGATAT	TATACCTTCT	
	- 1281							
promoter_B37	TCATCAATGG	CAAGTCATGT	AAAATCCAAT	CATC----CA	CACACACATA	TATGTCAAGT	TCAGTGATTA	
promoter_de18	TCATCAATGG	CAAGTCATGT	AAAATCCAAT	CATCCACACA	CACACACACA	TATGTCAAGT	TCAGTGATTA	*
	- 1211							
promoter_B37	CTGGTGTAGT	AGTGTGAGGA	TTGCATGTGG	CCGGGGAGAT	AAGAATAACA	ACACAAAGTG	ATAGCAAAGG	
promoter_de18	CTGGT---GT	AGTGTGAGGA	TTGCATGTGG	TCAGGGAGAT	AAGAATAACA	ACACAAAATG	ATAGCAAAGG	
	- 1141							
promoter_B37	AAAACATTAG	--GTGAGGGC	AGTCAACAAG	GTAGAAGGGT	AATGTTGCTT	ACAAATGTTGA	TTCCTAAGAA	
promoter_de18	AAAACATTAA	GCGTGAAGGT	AGTC-ACAAG	GTAGAAGGGT	AATGTTGCTT	ACAAATGTTGA	TTCCTAAGAA	*
	- 1071							
promoter_B37	GTTGTTTAGGC	ACAAGACTAG	GT-----AG	AGAGAAAGAC	ATGGAGTCGA	AGAGTAGTCG	ATGCACTGCC	
promoter_de18	GGTGTTTAGGC	ACAAGACTAG	GTAGAGAGAG	AGAGAGAGAG	ATGGAATCGA	AGAGTAGTCG	ATGCACTGCC	
	- 1001							
promoter_B37	ATATCCAATA	CGCCGCCACA	TCAACTTGAC	GGAAGGGTAG	AGAGAAGTGT	CATCGAGCAC	TCGCTTGTGC	
promoter_de18	ATATCCAATA	CGCCGCCACA	TCAACTTGAC	GGAAGGGTAG	AGAGAAGTGT	CATCGAGCAC	TCGATCGTGC	*
	- 931							
promoter_B37	GAGGACAAGC	CGCTATATAT	ACACAAGCGT	AAGATGCGTG	GATGGTTACC	ACGCGCATCG	TTTACTCGAA	
promoter_de18	GAGGACAAGC	CGCTATATAT	ACACAAGCGT	AAGATGCGTG	GATGGTTACC	ACGCGCATCG	TTTACTCGAA	
	- 861							
promoter_B37	GTTACGTTTA	TGTGACGTAA	CACAATTGTT	TTATCTTAAT	TTTTTCCAAC	TACAAATTTA	TATAAGGCAC	
promoter_de18	GTTACGTTTA	TGTGACGTAA	CACAATTGTT	TTATCTTAAT	TTTTTCCAAC	TACAAATTTA	TATAAGGCAC	
	- 791							
promoter_B37	ACGAGAATTT	GATCTACCAA	AAGAACAAAA	GGATCTCTAG	CCACATTTGT	AAAAGATGTG	GTGCCGATGC	
promoter_de18	ACGAGAATTT	GATCTACCAA	AAGAACAAAA	GGATCTCTAG	CCACATTTGT	AAAAGATGTG	GTGCCGATGC	
	- 721							
promoter_B37	GTTGGGGACA	GAGATTCAGA	GGTTTCTCAA	TCTGTGTGAG	AAGATCTCCT	TAATACAATG	CTCAGGGGCT	
promoter_de18	GTTGGGGACA	GAGATTCAGA	GGTTTCTCAA	TCTGTGTGAG	AAGATCTCCT	TAATACAATG	CTCAGGGGCT	
	- 651							
promoter_B37	GCATTACGCC	CCGTAGGTCA	TGTTTTTTTA	TATATGGGAG	CATAAGGTGT	TGCGAAAGAT	TCTACGTGCA	
promoter_de18	GCATTACGCC	CCGTAGGTCA	TGTTTTTTTA	TATATGGGAG	CATAAGGTGT	TGCGAAAGAT	TCTACGTGCA	
	- 581							
promoter_B37	ATAGAGGAAA	TTTCAAACAA	TGAAGGCGTG	GTTACATTAT	GTGGTTGTTC	TAGCAATGAG	TATAAGTGAA	
promoter_de18	ATGAGGAAA	TTTCAAACAA	TGAAGGCGTG	GTTACATTAT	GTGGTTTTC	-----	-----	*
	- 511							
promoter_B37	TTGTTTGAAT	TAAAGAATTT	GTTGTATGTG	TTTGAACTT	TGAATGGAAC	CCCACACTAA	GGTTTTAAAA	
promoter_de18	-----	-----	-----	-----	-----	-----	-----	
	- 441							
promoter_B37	AATGTGCATA	CTGTTTAACT	TGCATTATTA	TAGGTTTAAT	TTTCCAATAT	AGGTACTTTT	AAATTTAATA	
promoter_de18	-----	-----	-----	-----	-----	-----	-AATTTAATA	
	- 371							
promoter_B37	GAACCTCAAA	AAAGAATTTA	AAGTATACAT	ATAACTTTAT	ATGATAAAGA	ATGGATATAT	AGATAATTAC	
promoter_de18	GAACCTCAAA	AAAGAATTTG	AAGTATAC--	ATAACTTTAT	ATGATAAAGA	ATGGATATGT	AGATAATTAC	*
	- 301							
promoter_B37	TGGCCGGAAG	ATTCCATCCA	CCTCAATTAA	TGACATCATA	AATGTAAGGG	ATATATAATC	ATCTAAACAT	
promoter_de18	CGGCCGGAAG	ATTCCATCCA	CCTCAATTAA	TGACATCATA	AATGTAGGAG	ATAGATAAAT	ATCTAAACAT	*
	- 231							
promoter_B37	TGCTTAACGT	TCACACTAAA	GCCCTGTTTG	GGAACAAAGT	TTTTGAAAAC	CAAAGTATTT	GAAATACTAT	
promoter_de18	TGCTTAACGT	TCACACTAAG	GCCCTGTTTA	GGAACAAAAT	TTTTGAAAAA	CACAGTATTT	GAAATACTAC	*
	- 161							
promoter_B37	AAGATACTTT	AGTCAAGACA	ATATTATAGT	TTAAAATACT	ACAGTTTAA	AAATGAGGT	CCAGACTTAA	
promoter_de18	AAGATACTTT	AGTCAATACA	ATGCTATAGT	TTAAAATACT	ACAGTTTAA	AAACTGAGGT	CCAGACTTAA	*
	- 91							
promoter_B37	AGTTCCTTAA	AACAA-GGGG	ACATATACGT	CAATGCACAT	AGCCCTGCTG	TTTGTACTAT	AAATGGACCC	
promoter_de18	AGTTCCTTAA	AACAAGGGGG	ACAGATACGT	CAATGCACAT	AGCCCTGCTG	TTTGTACTAT	AAATGGACCC	*
	- 21							
promoter_B37	ACTCATCAT-	----CATAAG	C					
promoter_de18	ACTCATCATC	ATAACATAAG	C					