

TABLE S2**Primers used in this study**

Primer	Sequence (5'→3')
LEU2-M1	CCTAGTTAAGAACCCAACCCAggCCTAAATGGTATTATAATCACCAGC
LEU2-M2	GCTGGTGATTATAATACCATTTAGGccTGGGTTGGGTTCTTAAGT
XVR-GAP 1-F1	TCAATTAAGGTTCTTGGTAATTTCTATTTCTGAAAAACAAAAACattctgggtagaagatcg
XVR-GAP 1-R1	TATGATTTTGGTAATTTGAGTCAAATAGTCAATCAATGACTTTTTTgggaataactcaggtatcg
XVR-GAP 2-F1	AAAGAAAAATAAATTTAATGTATGTATCTATATATATATATATattctgggtagaagatcg
XVR-GAP 2-R1	TAATAATAACCCAGTTGATTATGGCTATTGTCTGTTTTAAGTGATgggaataactcaggtatcg
XVR-GAP 3-F1	GATCTTGACATAAATGGCCTATTATAGAGAGTCACGCTGAACACattctgggtagaagatcg
XVR-GAP 3-R1	AGCTCTAGCAACTTAATGCAGAGAAAGATTTGAAGCTACCGCCGcgggaataactcaggtatcg
XVR-GAP 4-F1	AATTAATGATACTTATAATAAATTTGATTGAAAATAGTTACCTATTattctgggtagaagatcg
XVR-GAP 4-R1	TTCATATATATTAAGGAGTTTAACTATATACATATGATTAGGTAgggaataactcaggtatcg
XVR-GAP 5-F1	TGCAGCAAACAAAAGGGCGAAATAATAGTTACTCCAAAGATGAAattctgggtagaagatcg
XVR-GAP 5-R1	ATGCCTCCTTCGCAAACGTATAGTTTTCCATTTTCTTCTGCCATgggaataactcaggtatcg
XVR-GAP 6-F1	TCTTCGCCAACTCTATAAAAAGGCTGTACTCCTATAATTAAGTATgggaataactcaggtatcg
XVR-GAP 6-R1	CACAACTCATAGAAAATAAATACTAGTATGATTCCGGAAATTAATTTattctgggtagaagatcg
XVR-GAP 7-F1	AAATGTTCTAGCTATTCATTTACCTTCCCGAAAAGCATTCTTTCGAattctgggtagaagatcg
XVR-GAP 7-R1	GCAACGAAGACAGTTCTGAGATGAATGGCAGAAAGAACTGCAGCTgggaataactcaggtatcg
XVR-GAP 8-F1	TTATCCAAACCGTTGGAGCTTTCCCTTTATTTCTACATAGGTTTCattctgggtagaagatcg
XVR-GAP 8-R1	AAACAGATCGCCATAAAAAGGAGAAGCTCCGTAGGAGACCGTTTTTCgggaataactcaggtatcg
XVR-GAP 9-F1	TTTTTTCAACTACTGTTACGGTCAAGAACTAATACTGAGGATAAattctgggtagaagatcg
XVR-GAP 9-R1	TTCAAGACTTTAAATCACTTGTACCAAAATCATTGTTGCGAAAACgggaataactcaggtatcg
XVR-Site11-F1	ACGTAGATGAGCTATCGATTTTTTCTGCATACCAAGCAAGTTTACattctgggtagaagatcg
XVR-Site11-R1	ATAGATCACGCTTCAGCCGCTCTGTGTCGACTTTCTTTTCGCCAGgggaataactcaggtatcg
XVR-Site12-F1	GTATTTCACTGTTTTGATTTAGTGTGTTGTCACGGCAGTAGCGAattctgggtagaagatcg
XVR-Site12-R1	CTTTTTATAGATTGTCTTTTTATCCTACTCTTTCCACTTGTCTCgggaataactcaggtatcg
XVIL-Gap 1-F1	GATGTGGTAAAGACAACGAAATACTACGTAAATCATATTGGTCTGattctgggtagaagatcg
XVIL-Gap 1-R1	ATTCCATTGCAGTGATTTGATTGGGAGTAAGCTTTTATAAACGAGgggaataactcaggtatcg
XIIIIR-Gap 1-F1	CATAGCTAAAGGACTATCTGGCTCGGCCATAAGTTTGAATTTGTattctgggtagaagatcg
XIIIIR-Gap 1-R1	CTTCGACGATTTAGGTAGGTATAAGGGTTTCCCTATACCTGTATAgggaataactcaggtatcg
XIIIIR-Site12-F1	ATTGGAGGGTAACGGTTATGGTGCACGATGGGTGGTGGTAGCAAattctgggtagaagatcg
XIIIIR-Site12-R1	TGTCCTTTCAACCATAACCGCTCCAACCACCATCCATCTCTCTACgggaataactcaggtatcg
YKU70Δ::KanMX4-F1	ATGATTTGTTAAGTGACTCTAAGCCTGATTTTAAAACGGGAATATTcgtacgctgcaggtcgac
YKU70Δ::KanMX4-R1	AAATATTGTATGTAACGTTATAGATATGAAGGATTTCAATCGTCTatcgtatgaattcaggtcgac
YKU80Δ::KanMX4-F1	AGAGTGCAGGACATATGCACAAATAATATATCTCACACCATAATAcgtacgctgcaggtcgac
YKU80Δ::KanMX4-R1	TAACTGTGGTGACGAAAACATAACTCAAAGGATGTTAGACCTTTTatcgtatgaattcaggtcgac
KIURA3B/C-U2	CCTGGCAAACGACGATCTTC
KIURA3B/C-U3	CAATGGAACGACAGTACCCTC
XVR-GAP 1-A1	GCCGTATGTTATGGGTGCAAG
XVR-GAP 1-A4	GCTTGCTGACACAGAAGTGAC
XVR-GAP 2-A1	GCATCCTAATGCTGGTCCTAC
XVR-GAP 2-A4	GCTGCAGACATCTCTAATGTG
XVR-GAP 3-A1	CGTGATTTAGCTATCGGAACC

XVR-GAP 3-A4	CTAATACGGTAGAGTGTGCGAC
XVR-GAP 4-A1	CACTTCCTTGCCTAAAAGCTGG
XVR-GAP 4-A4	CCAGGATACATCATCGTCATC
XVR-GAP 5-A1	CGTTCCCTCTAGACATCTACAG
XVR-GAP 5-A4	ACGGTTGGTTCGTTAACACCTC
XVR-GAP 6-A1	CATACCCTTGGTTGGTACGAC
XVR-GAP 6-A4	CCGTTTCGCAGTGTAAACTATG
XVR-GAP 7-A1	CGAAGGTACTACACCTCACCC
XVR-GAP 7-A4	GGCTTACGAATGAACATGAGC
XVR-GAP 8-A1	TGTCTTTTAAGAGTGAAGAGCC
XVR-GAP 8-A4	GACAGTGCAGAGTGATTTCTC
XVR-GAP 9-A1	GGGAAGGCTGTTCCAATCAAG
XVR-GAP 9-A4	CGTATTGCTAAGCCTATCTCC
XVR-Site11-A1	CAGAACTGGTGCAATGGATAG
XVR-Site11-A4	AACTGAGCCTTGCATGCAAAG
XVR-Site12-A1	CTGCAGATAACACGAGGGTAC
XVR-Site12-A4	CTCTCGCTGTCATACCTTACC
XIII-L-Site12-A4	CTTFACTCTCGCTGTCACTCC
XVIR-Site12-A4	CAAGCCCTGTTGTCTCTTACC
VIIR-Site12-A4	CAAGCCCTGTTGTCTCTTACC
XVII-Gap 1-A1	GGCACGAGTTATCCATTGCTG
XVII-Gap 1-A4	GCAAATGCACCAACAACACGG
XIIIR-Gap 1-A1	GCTAAAGTCCCATTGGTTGAC
XIIIR-Gap 1-A4	AGAAGTTCTCCTCGAGGATAG
XIIIR-Site12-A1	TAGAGTTGAGGGGATAGTGCC
XIIIR-Site12-A4	AACCACCATCCATCTCTCTAC
YKU70-A1	ACAACAGGTCACTTCTGCAAG
YKU70-A4	GGGACCCACAAAGTAATTGTC
YKU80-A1	GTAGCCTTGTGGCGCAATCG
YKU80-A4	CCTGTTTGTTCCTGGAAGTGC
KanMX4-K2	TTCAGAAACAACCTCTGGCGCA
KanMX4-K3	CATCCTATGGAACTGCCTCGG

Each primer is named according to its target site. LEU2-M1 and LEU2-M2 were used for site directed mutagenesis of the *KIURA3-LEU2* cassette to generate the mutant heteroalleles *KIURA3-LEU2C* and *KIURA3-LEU2B*, respectively. All primers ending with F1 or R1 were used for generating cassettes by PCR, in order to carry out targeted gene disruptions or genomic integrations. The corresponding primers to determine genomic integration at the correct locus are shown immediately to the right. Primers ending with A1, were used in conjunction with U2 or K2 primers and primers ending with A4, were used in conjunction with U3 or K2 primers, respectively.