

Table S3. Primers used in this study

Name	Sequence(5'-3')	Description	Alias
HphMX4-F	CATCACATCCGAACATAAACACCATGGGTAA AAGCCTGAAGCTACCCGCGACG	Forward primer PCR for amplifying HphMX4 from pCloneHyg1, and then replace the KANMX6 of pFA6a-13Myc-KANMX6 by HphMX4 to obtain pFA6a-13Myc-HphMX4	
HphMX4-R	CTTTTATTGTCCAGTACTGATTATTCCTTTGCC TCGGACGAGTGCTGGGG	Reverse primer PCR for amplifying HphMX4 from pCloneHyg1, and then replace the KANMX6 of pFA6a-13Myc-KANMX6 by HphMX4 to obtain pFA6a-13Myc-HphMX4	
KmARS1-F	GAACGCGGCCGCGAGCTGAAGCTTATCGATTGA AGTTTGTCCAACTATCCACTATG	Forward primer PCR for amplifying KmARS1 from genomic DNA of FIM-1, and ligating with ADH1 by overlap extension PCR, then inserting into Sma I and Hind III site of pFA6a-13Myc-HphMX4 to obtain LHZ881	
KmARS1-R	CTATTTCATTACCATCATTTCTTCGTCGACCCG CGGTTTTAACGATATATCATTTTCAA	Reverse primer PCR for amplifying KmARS1 from genomic DNA of FIM-1, and ligating with ADH1 by overlap extension PCR, then inserting into Sma I and Hind III site of pFA6a-13Myc-HphMX4 to obtain LHZ881	
ADH1-F	TTGAAATGATATATCGTTAAACCGCGGGTCG ACGAAGAAATGATGGTAAATGAAATAG	Forward primer PCR for amplifying ADH1 from genomic DNA of S288C, and ligating with KmARS1 by overlap extension PCR, then inserting into Sma I and Hind III site of pFA6a-13Myc-KANMX6 to obtain LHZ881	
ADH1-R	GCCTCGAGTACCGGTACCGCTACCCGGGAGTTG ATTGTATGCTTGGTATAGCTTG	Reverse primer PCR for amplifying ADH1 from genomic DNA of S288C, and ligating with KmARS1 by overlap extension PCR, then inserting into Sma I and Hind III site of pFA6a-13Myc-KANMX6 to obtain LHZ881	
cen5-F	TAAATTGAAATGATATATCGTTAAACCGCGG GTCACGTGTATACAAATTATTAATTTTAAAC	Forward primer PCR for amplifying KmCEN5 from genomic DNA of FIM-1, and then inserting into Sal I site of LHZ881 vector to obtain LHZ882	
cen5-R	CATTACCATCATTTCTTCGTCGACGGATCTAT TTACTTTTCGGAACAACCTTTTAAAC	Reverse primer PCR for amplifying KmCEN5 from genomic DNA of FIM-1, and then inserting into Sal I site of LHZ881 vector to obtain LHZ882	
FS-cen1-F	AAAATGATATATCGTTAAAAATAATAAAATATA ATTTTACATAGTATAACTCTAAAC	Forward primer PCR for amplifying KmCEN1 and flanking sequence from genomic DNA of FIM-1, and then inserting into Sal I site of LHZ881 vector	
FS-cen1-R	CATTACCATCATTTCTTCGTCGACTTTAATGAT TAATTGTTACATTTGGTATAAG	Reverse primer PCR for amplifying KmCEN1 and flanking sequence from genomic DNA of FIM-1, and then inserting into Sal I site of LHZ881 vector	
FS-cen2-F	TGAAATGATATATCGTTAAAAATAAGAGAAAT AAAGTTTTTATATAAAGAATAAAAG	Forward primer PCR for amplifying KmCEN2 and flanking sequence from genomic DNA of FIM-1, and then inserting into Sal I site of LHZ881 vector	
FS-cen2-R	ATTTCAATTACCATCATTTCTTCCTTAATAACTC TTATAAATGATATAATTTTGTTTA	Reverse primer PCR for amplifying KmCEN2 and flanking sequence from genomic DNA of FIM-1, and then inserting into Sal I site of LHZ881 vector	
FS-cen3-F	AATTGAAATGATATATCGTTAAATTCGTTAC ATAACAACACGCTTTTATAAAC	Forward primer PCR for amplifying KmCEN3 and flanking sequence from genomic DNA of FIM-1, and then inserting into Sal I site of LHZ881 vector	
FS-cen3-R	ATTTACCATCATTTCTTCGTCGACAATAAACAA AATAAAATAAAATAAAATAAAAT	Reverse primer PCR for amplifying KmCEN3 and flanking sequence from genomic DNA of FIM-1, and then inserting into Sal I site of LHZ881 vector	
FS-cen4-F	AATTGAAATGATATATCGTTAAATTCGTTAT TCTTTATCTTTGCAATTAAC	Forward primer PCR for amplifying KmCEN4 and flanking sequence from genomic DNA of FIM-1, and then inserting into Sal I site of LHZ881 vector	
FS-cen4-R	ATTTCAATTACCATCATTTCTTCAAAAATAAAT AAAATAAAATAAAATAAAATAAAT	Reverse primer PCR for amplifying KmCEN4 and flanking sequence from genomic DNA of FIM-1, and then inserting into Sal I site of LHZ881 vector	
FS-cen5-F	TTGAAATGATATATCGTTAAAGTCAACCGCA ACACCACCTATTCTAAGAGGAGAG	Forward primer PCR for amplifying KmCEN5 and flanking sequence from genomic DNA of FIM-1, and then inserting into Sal I site of LHZ881 vector	
FS-cen5-R	TATTTCAATTACCATCATTTCTTCGTCGACGAGC TCCTTTCAATTCTGATAAAGTAAGG	Reverse primer PCR for amplifying KmCEN5 and flanking sequence from genomic DNA of FIM-1, and then inserting into Sal I site of LHZ881 vector	
FS-cen6-F	AATTGAAATGATATATCGTTAAATAGTGTGT GGAACCTATAATTAATACTTG	Forward primer PCR for amplifying KmCEN6 and flanking sequence from genomic DNA of FIM-1, and then inserting into Sal I site of LHZ881 vector	
FS-cen6-R	CATTACCATCATTTCTTCGTCGACATCTAAATA AATATAGGATGCAAAAGC	Reverse primer PCR for amplifying KmCEN6 and flanking sequence from genomic DNA of FIM-1, and then inserting into Sal I site of LHZ881 vector	
FS-CEN7-F	AATTGAAATGATATATCGTTAAACTCTACCC TTTTCAATCCAAAAGT	Forward primer PCR for amplifying KmCEN7 and flanking sequence from genomic DNA of FIM-1, and then inserting into Sal I site of LHZ881 vector	
FS-CEN7-R	CTATTTCATTACCATCATTTCTTCAATTAAGTT AAAACGCCATAAAATATG	Reverse primer PCR for amplifying KmCEN7 and flanking sequence from genomic DNA of FIM-1, and then inserting into Sal I site of LHZ881 vector	
FS-cen8-F	ATTGAAATGATATATCGTTAAAAAATATTA AGCATTGAAATAAATAAATAACAAT	Forward primer PCR for amplifying KmCEN8 and flanking sequence from genomic DNA of FIM-1, and then inserting into Sal I site of LHZ881 vector	
FS-cen8-R	CTATTTCATTACCATCATTTCTTCAATTTTCCA AAAAAATGTCTATAAATCG	Reverse primer PCR for amplifying KmCEN8 and flanking sequence from genomic DNA of FIM-1, and then inserting into Sal I site of LHZ881 vector	
ARS1-F	GAACGCGGCCGCGAGCTGAAGCTTATCGATTGA AGTTTGTCCAACTATC	Forward primer PCR for amplifying KmARS1 from LHZ881, and then inserting into Pvu II and Sal I sites of LHP620	
ARS1-R	CTACCTGGCCTGGATGGCTGTGACGGATCCTT TTAACGATATATCATTTTC	Reverse primer PCR for amplifying KmARS1 from LHZ881, and then inserting into Pvu II and Sal I sites of LHP620	
panARS-F	GAACGCGGCCGCGAGCTGAAGCTTTCAACATCT TTGGATAATATGCAAGTAG	Forward primer PCR for amplifying panARS from the genomic DNA of ATCC8585, and then inserting into Pvu II and Sal I sites of LHP620	
panARS-R	CTACCTGGCCTGGATGGCTGTGACTAGTGCTG ATTATGATTGACGTTTATATAC	Reverse primer PCR for amplifying panARS from the genomic DNA of ATCC8585, and then inserting into Pvu II and Sal I sites of LHP620	
YY402F	TTGTGCTACACCGTCTCACTACTTG	PCR for identifying the LAC4 gene	
YY551F	TTGCTAACAAAATAAACTTGAACACG	PCR for identifying the inversion of LAC4 gene	
YY590R	CATTATCGCATAAGACAATCGGCAC	PCR for identifying the deletion of LAC4 gene	
YY558R	TCAAGAGGTGCGTCAAAACAACGC	PCR for identifying the LAC4 gene	
RHY101F	TCA CTAAGTGAAGTCGAGTGTGA	gRNA for LHZ891 CRISPR plasmid	
RHY101R	AAC TCACACTCGACTTCAAGTAG	gRNA for LHZ891 CRISPR plasmid	
RHY102F	TCA GATAGAATAT TTGGTAGTAG	gRNA for LHZ897 CRISPR plasmid	
RHY102R	AAC CTACTACCAA ATATTCTATC	gRNA for LHZ897 CRISPR plasmid	
RHY102-up-F	GAATGAAACACACAATCTCCCTCC	PCR for amplifying the upstream sequence of Chr I (747278bp)	F1
RHY102-up-R	GAAAGTGCTCTACTCTGCTCTTAATACACCATA ACTTCGTATAATGTACATTATACGAAGTTATACT ACTACCAATATTCTATCAAAATCACTAAGG	PCR for amplifying the upstream sequence of Chr I (747278bp)	
RHY102-down-F	GGTGTTAATAGAGCAGAGTAGAGCACTTTC	PCR for amplifying the downstream sequence of Chr I (747278bp)	
RHY102-down-R	CTGACAACCTCTTCCTTTACGCCTC	PCR for amplifying the downstream sequence of Chr I (747278bp)	R1
RHY103F	TCACATTGCTATGGAATGCAGCT	gRNA for LHZ898 CRISPR plasmid	
RHY103R	AACAGCTGCATTCCATAGCAATG	gRNA for LHZ898 CRISPR plasmid	
RHY103-up-F	ATGCTATGGTCAAGAAGAGAAAAAGC	PCR for amplifying the upstream sequence of Chr VIII (440003)	15-F

RHY103-up-R	TCATTGCTATGGAATGCAGCTTGATAACTTCGT ATAATGTACATTATACGAAGTTATGTGTTTATGT AATATTTCTAAATATGTAATAAAAG	PCR for amplifying the upstream sequence of Chr VIII (440003)	
RHY103-down-F	CAAGCTGCATTCCATAGCAATGA	PCR for amplifying the downstream sequence of Chr VIII (440003)	
RHY103-down-R	TACCTCCAACCTCCTGAAAAGGACAC	PCR for amplifying the downstream sequence of Chr VIII (440003)	15-R
RHY104F	TCAGAATTGAATTTAACGAACCT	gRNA for LHZ899 CRISPR plasmid	
RHY104R	AACAGGTTTCGTTAAATTCAATTC	gRNA for LHZ899 CRISPR plasmid	
RHY104-up-F	CAACCACAATCTACCGTTTCATCTG	PCR for amplifying the upstream sequence of Chr VII (409354)	3-F
RHY104-up-R	ATAAAAATGTCATAAATGGCTCTCCATAACTTC GTATAATGTACATTATACGAAGTTATGAGGTTT GTAAATCAATTTCGATTAAAC	PCR for amplifying the upstream sequence of Chr VII (409354)	
RHY104-down-F	GGAGAGCCATTATGACATTTTAT	PCR for amplifying the downstream sequence of Chr VII (409354)	
RHY104-down-R	TTTCCGTTCTATTTTCGTTTATTTT	PCR for amplifying the downstream sequence of Chr VII (409354)	3-R
RHY105F	TCAATAATGGGACACATAAGCGA	gRNA for LHZ900 CRISPR plasmid	
RHY105R	AACTCGCTTATGTGTCCCATTAT	gRNA for LHZ900 CRISPR plasmid	
RHY105-up-F	ACTCTCTTGTGTAATCCATGGGATC	PCR for amplifying the upstream sequence of Chr I (1673871)	2-F
RHY105-up-R	CTTAGCGTGTGAATTTATTTAGCACCAACTTC GTATAATGTACATTATACGAAGTTATATCGCTTA TGTGTCCCATTATTTG	PCR for amplifying the upstream sequence of Chr I (1673871)	
RHY105-down-F	GGTGCTAAATAAATTCACACGCTAAG	PCR for amplifying the downstream sequence of Chr I (1673871)	
RHY105-down-R	ATGTATGGTGCGAATTTTATTCACC	PCR for amplifying the downstream sequence of Chr I (1673871)	2-R
RHY106F	TCAAGGGTTAGGTTTGAATGGTA	gRNA for LHZ901 CRISPR plasmid	
RHY106R	AACTACCATTCAAACCTAACCCCT	gRNA for LHZ901 CRISPR plasmid	
RHY106-up-F	GCTTGGTCCAAGATTGACTTTAG	PCR for amplifying the upstream sequence of Chr II (896924)	10-F
RHY106-up-R	GAAGAGGGTTAGGTTTGAATGGTACATAACTTC GTATAATGTACATTATACGAAGTTATGGGGGTA TGTTCAAAGAACAAAAAT	PCR for amplifying the upstream sequence of Chr II (896924)	
RHY106-down-F	GTACCATTCAAACCTAACCCCTCTTC	PCR for amplifying the downstream sequence of Chr II (896924)	
RHY106-down-R	ATGATCGTGGTTTGAATCAATAC	PCR for amplifying the downstream sequence of Chr II (896924)	10-R
RHY107F	TCA GAATCATGGGCTTTTGTAA	gRNA for LHZ902 CRISPR plasmid	
RHY107R	AAC TTACAAAAAGCCCATGATTC	gRNA for LHZ902 CRISPR plasmid	
RHY107-up-F	ATTGACAAGGCAACTAGGTAAACACG	PCR for amplifying the upstream sequence of Chr I (1451427)	9-F
RHY107-up-R	TAGGAAAATCATTAAATATCCTGCCATAACT TCGTATAATGTACATTATACGAAGTTATCTTACA AAAAGCCCATGATTCG	PCR for amplifying the upstream sequence of Chr I (1451427)	
RHY107-down-F	GGCAGGATATTATTAATGATTTTCCTA	PCR for amplifying the downstream sequence of Chr I (1451427)	
RHY107-down-R	GCGAAAGAAATTAACCAACAGAAAC	PCR for amplifying the downstream sequence of Chr I (1451427)	9-R
RHY108F	TCA CCGATTCTCTCCCGCATCT	gRNA for LHZ903 CRISPR plasmid	
RHY108R	AAC AGATGCGGGGAGAGAATCGG	gRNA for LHZ903 CRISPR plasmid	
RHY108-up-F	ACTACTCGCACTCCACCATAATCC	PCR for amplifying the upstream sequence of Chr III (326046)	11-F
RHY108-up-R	TAAAAACGTTATTCTTTTAACAGAGCCATAACT TCGTATAATGTACATTATACGAAGTTATGAGAT GCGGGGAGAGAATCGG	PCR for amplifying the upstream sequence of Chr III (326046)	
RHY108-down-F	GGCTCTGGTTAAAAGAATAACGTTTTTA	PCR for amplifying the downstream sequence of Chr III (326046)	
RHY108-down-R	AGGTGTCTAGCAAAATGAACGAATC	PCR for amplifying the downstream sequence of Chr III (326046)	11-R
RHY109F	TCA GGTAATTATTTCTTTCTAC	gRNA for LHZ904 CRISPR plasmid	
RHY109R	AAC GTAGAAAGAAAATAATTACC	gRNA for LHZ904 CRISPR plasmid	
RHY109-up-F	GCTATTGTAGTTGGGGGAAGTGG	PCR for amplifying the upstream sequence of Chr IV (704908)	12-F
RHY109-up-R	TTTACAACCTATAAATATATCCATAACTTCGTA TAATGTACATTATACGAAGTTATGGATATAGTTT ATAGGTTGTAACCTCTTTC	PCR for amplifying the upstream sequence of Chr IV (704908)	
RHY109-down-F	TGTAGAAAGAAAATAATTACCACTATTTATTTT	PCR for amplifying the downstream sequence of Chr IV (704908)	
RHY109-down-R	CGACTCTCTGGTTTACAAGCTGAC	PCR for amplifying the downstream sequence of Chr IV (704908)	12-R
RHY110F	TCA GCACGGAGCAGATCTAGTTT	gRNA for LHZ905 CRISPR plasmid	
RHY110R	AAC AAAGTAGATCTGCTCCGTGC	gRNA for LHZ905 CRISPR plasmid	
RHY110-up-F	TCTTGATGAACAGATGGTATGTTGC	PCR for amplifying the upstream sequence of Chr V (346042)	7-F
RHY110-up-R	GCAGAAGTCCTTATAATATATGTTGCCATAACTT CGTATAATGTACATTATACGAAGTTATTAACCT AGATCTGCTCCGTGCCAG	PCR for amplifying the upstream sequence of Chr V (346042)	
RHY110-down-F	GGCAACATATATTATAAGGACTTCTGC	PCR for amplifying the downstream sequence of Chr V (346042)	
RHY110-down-R	GGCAAGCGATATAAAAGAGATGA	PCR for amplifying the downstream sequence of Chr V (346042)	7-R

RHY111F	TCA CTTTACTTATGATGATAGGA	gRNA for LHZ906 CRISPR plasmid	
RHY111R	AAC TCCTATCATCATAAGTAAAG	gRNA for LHZ906 CRISPR plasmid	
RHY111-up-F	ACTTGC GGATCTTCTCTGATGTATC	PCR for amplifying the upstream sequence of Chr VI (1069906)	13-F
RHY111-up-R	TGTTCTTTACTTATGATGATAGGAAATAACTTCG TATAATGTACATTATACGAAGTTATGGACATTTT TTTTAAGCCTTGATAGC	PCR for amplifying the upstream sequence of Chr VI (1069906)	
RHY111-down-F	TTCCTATCATCATAAGTAAAGAACATTTTTTTC	PCR for amplifying the downstream sequence of Chr VI (1069906)	
RHY111-down-R	AAGAAGAGCAGGAGGATCTGGAG	PCR for amplifying the downstream sequence of Chr VI (1069906)	13-R
RHY112F	TCA AGCATAAGTCGTGATATTCC	gRNA for LHZ907 CRISPR plasmid	
RHY112R	AAC GGAATATCACGACTTATGCT	gRNA for LHZ907 CRISPR plasmid	
RHY112-up-F	GGGCAAGCGAAGTGTTACTGAAG	PCR for amplifying the upstream sequence of Chr III (1219332)	5-F
RHY112-up-R	TGGAATATCACGACTTATGCTGGT	PCR for amplifying the upstream sequence of Chr III (1219332)	
RHY112-down-F	CCAGCATAAGTCGTGATATTCCAATAACTTCGT ATAATGTACATTATACGAAGTTATGGCGAAATA AACAACAACCTCCA	PCR for amplifying the downstream sequence of Chr III (1219332)	
RHY112-down-R	CTATATACTGGACGGATGCATGGAG	PCR for amplifying the downstream sequence of Chr III (1219332)	5-R
RHY113F	TCA TGAGAACCAGAAAGATTAGA	gRNA for LHZ908 CRISPR plasmid	
RHY113R	AAC TCTAATCTTTCTGGTTCTCA	gRNA for LHZ908 CRISPR plasmid	
RHY113-up-F	CTGGAAATACGTCTTGCAGTAAACA	PCR for amplifying the upstream sequence of Chr IV (1172245)	8-F
RHY113-up-R	ATCACTCACTCAAATATCCCTAGCCATAACTTCG TATAATGTACATTATACGAAGTTATTTCTAATCT TTCTGGTTCTCACTTCG	PCR for amplifying the upstream sequence of Chr IV (1172245)	
RHY113-down-F	GGCTAGGGATATTTGAGTGAGTGAT	PCR for amplifying the downstream sequence of Chr IV (1172245)	
RHY113-down-R	CTGCTGAAAACCTTCAGAGCTTTATG	PCR for amplifying the downstream sequence of Chr IV (1172245)	8-R
RHY114F	TCA GTCCGTCGCACTACTGTATG	gRNA for LHZ909 CRISPR plasmid	
RHY114R	AAC CACACAGTAGTGCGACGGAC	gRNA for LHZ909 CRISPR plasmid	
RHY114-up-F	GTTGTCTTCTAGTGTGACGTCGATG	PCR for amplifying the upstream sequence of Chr V (756338)	16-F
RHY114-up-R	GTTATTATTATGATTTGGGCAGTCCATAACTTC GTATAATGTACATTATACGAAGTTATTCATACA GTAGTGCGACGGACTCTTG	PCR for amplifying the upstream sequence of Chr V (756338)	
RHY114-down-F	GGACTGCCCAAATACATAATAATAACA	PCR for amplifying the downstream sequence of Chr V (756338)	
RHY114-down-R	ATTTCGCGTATTATTTGAGGATCTC	PCR for amplifying the downstream sequence of Chr V (756338)	16-R
RHY115F	TCA AAGGATGATAATAGTGCATT	gRNA for LHZ910 CRISPR plasmid	
RHY115R	AAC AATGCACTATTATCATCCTT	gRNA for LHZ910 CRISPR plasmid	
RHY115-up-F	TCTACAGCATACTCCCTATCTGCAG	PCR for amplifying the upstream sequence of Chr VI (753935)	6-F
RHY115-up-R	TAATGCACTATTATCATCCTTAAATTCTAAT	PCR for amplifying the upstream sequence of Chr VI (753935)	
RHY115-down-F	ATTTAAGGATGATAATAGTGCATTAATAACTTC GTATAATGTACATTATACGAAGTTATGGCTACA CTACAACCTACGACCTATC	PCR for amplifying the downstream sequence of Chr VI (753935)	
RHY115-down-R	GAAATGGTTTATGAAATTTCCAAG	PCR for amplifying the downstream sequence of Chr VI (753935)	6-R
RHY116F	TCA GATCTATTATTATAATTATG	gRNA for LHZ911 CRISPR plasmid	
RHY116R	AAC CATAATTATAATAATAGATC	gRNA for LHZ911 CRISPR plasmid	
RHY116-up-F	TTTCCAGAGGCATTATACGAAAAG	PCR for amplifying the upstream sequence of Chr VII (689479)	14-F
RHY116-up-R	TAATGATCTATTATTATAATTATGAATAACTTCG TATAATGTACATTATACGAAGTTATGGCTTAAAT TGTTTTCTCGTTATC	PCR for amplifying the upstream sequence of Chr VII (689479)	
RHY116-down-F	TCATAATTATAATAATAGATCATTAATAAACTG AC	PCR for amplifying the downstream sequence of Chr VII (689479)	
RHY116-down-R	AATTGGATGATATACCTCCTCACAG	PCR for amplifying the downstream sequence of Chr VII (689479)	14-R
RHY117F	TCA AGCGTATATAATTCTCGCTTC	gRNA for LHZ912 CRISPR plasmid	
RHY117R	AAC GAAGCGAGAAATATATACGCT	gRNA for LHZ912 CRISPR plasmid	
RHY117-up-F	ATGGTTGTTAAAGTTTTGAAGCAAAC	PCR for amplifying the upstream sequence of Chr II (717538)	4-F
RHY117-up-R	GTGAGGAGGGTAGTGAGCTTTTCCATAACTTCG TATAATGTACATTATACGAAGTTATAGAAGCGA GAATATATACGCTTATAACTTTTAG	PCR for amplifying the upstream sequence of Chr II (717538)	
RHY117-down-F	GGAAAAGCTCACTACCTCCTCAC	PCR for amplifying the downstream sequence of Chr II (717538)	
RHY117-down-R	CTGTACAGAGACATAGTAACCGGGATTC	PCR for amplifying the downstream sequence of Chr II (717538)	4-R
RHY118F	TCA TGATTAAGACAGAAATGAT	gRNA for LHZ913 CRISPR plasmid	
RHY118R	AAC ATCATTTCTGTCTTTAATCA	gRNA for LHZ913 CRISPR plasmid	
RHY118-up-F	TCTTCAACTTATGTGCCACAAGATC	PCR for amplifying the upstream sequence of Chr VIII (610289)	1-F

RHY118-up-R	TATAGGTTGTAATACGTTTCATGACTATAACTTCG TATAATGTACATTATACGAAGTTATGGTTCAAA AACTAATTTCTCAATTCAG	PCR for amplifying the upstream sequence of Chr VIII (610289)	
RHY118-down-F	AGTCATGAACGTATTACAACCTATATCC	PCR for amplifying the downstream sequence of Chr VIII (610289)	
RHY118-down-R	AGACTTCTTCTGGTAGAAACGGAAG	PCR for amplifying the downstream sequence of Chr VIII (610289)	1-R

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