**S5 Table. The oligonucleotides used in this study**

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| --- | --- | --- |
| **Name** | **Sequence (5' to 3')** | **Description** |
| SNR52\_R\_30 | ccaatttcagatcgtcttgaCAAATTAAAAATAGTTTACGCAAGTC | sgRNA synthesis against *C2\_00030W* |
| sgRNA\_F\_30 | tcaagacgatctgaaattggGTTTTAGAGCTAGAAATAGCAAGTTAAA | sgRNA synthesis against *C2\_00030W* |
| SNR52\_R\_1540 | ccgcttgtatcttttggctcCAAATTAAAAATAGTTTACGCAAGTC | sgRNA synthesis against *C2\_01540W* |
| sgRNA\_F\_1540 | gagccaaaagatacaagcggGTTTTAGAGCTAGAAATAGCAAGTTAAA | sgRNA synthesis against *C2\_01540W* |
| SNR52\_R\_2960 | cgggtatgacttggctacaaCAAATTAAAAATAGTTTACGCAAGTC | sgRNA synthesis against *C2\_02960C* |
| sgRNA\_F\_2960 | ttgtagccaagtcatacccgGTTTTAGAGCTAGAAATAGCAAGTTAAA | sgRNA synthesis against *C2\_02960C* |
| 30\_NAT\_FLP\_For | ctagaaaccgatgccttgcccatcaacaccatcacagataaaatcaatctccccattggccaccccgaatcaatcacactTAAAGGGAACAAAAGCTGGG | Deletion construct with a homology arm to *C2\_00030W* |
| 1540\_NAT\_FLP\_Rev | cttgtggttgagatttcacagagcaaccatctttcttcaaaacagactgatcatgtctaaactctttaccatgaccataaCTCTAGAACTAGTGGATCTG | Deletion construct with a homology arm to *C2\_01540W* |
| 2960\_NAT\_FLP\_Rev | tggatctctagaacattttgaaaatacagcaatagacccggataccatttttcaggagaagggtgtaattgaattgaacaCTCTAGAACTAGTGGATCTG | Deletion construct with a homology arm to *C2\_02960C* |
| Chr2Del\_F1 | TACCGGTCTTCCCATCAACT | Genotype PCR forward primer binding at Chr2A: 5,510..5,529 |
| Chr2Del\_F2 | TCAGCAAAATGATCGAGGCA | Genotype PCR forward primer binding at Chr2A: 274,792..274,811 |
| Chr2Del\_R1 | AATGGAGCGTCAGCTAAAGG | Genotype PCR reverse primer binding at Chr2A: 275,578..275,559 |
| Chr2Del\_R2 | AGCGATTGCTGGTCTCAAAA | Genotype PCR reverse primer binding at Chr2A: 276,530..276,511 |
| Chr2Del\_R3 | CACCATGACATTCGGTGCTA | Genotype PCR reverse primer binding at Chr2A: 591,190..591,171 |
| SNR52\_R\_550 | acactggctctttttgatgaCAAATTAAAAATAGTTTACGCAAGTC | sgRNA synthesis against *C2\_00550W* |
| sgRNA\_F\_550 | tcatcaaaaagagccagtgtGTTTTAGAGCTAGAAATAGCAAGTTAAA | sgRNA synthesis against *C2\_00550W* |
| 550\_NAT\_FLP\_Rev | cagccaccgccaaagcatccaagttagttgtcacatgattggtgactctatttgatagaatattgtgtatttcacctttaCTCTAGAACTAGTGGATCTG | Deletion construct with a homology arm to *C2\_00550W* |
| SNR52\_R\_560 | acttcttcctcgatagcatcCAAATTAAAAATAGTTTACGCAAGTC | sgRNA synthesis against *C2\_00560W* |
| sgRNA\_F\_560 | gatgctatcgaggaagaagtGTTTTAGAGCTAGAAATAGCAAGTTAAA | sgRNA synthesis against *C2\_00560W* |
| 560\_NAT\_FLP\_For | aaactattacgttaaatctgataatgaacaattcaaatgattggagtttttcattatgtgatgactctcttgaactatttTAAAGGGAACAAAAGCTGGG | Deletion construct with a homology arm to *C2\_00560W* |
| SNR52\_R\_1140 | atatggacttctatgttgaaCAAATTAAAAATAGTTTACGCAAGTC | sgRNA synthesis against *C2\_01140C* |
| sgRNA\_F\_1140 | ttcaacatagaagtccatatGTTTTAGAGCTAGAAATAGCAAGTTAAA | sgRNA synthesis against *C2\_01140C* |
| 1140\_NAT\_FLP\_Rev | ttgtattcatattgagtcccatcttttgcaaccaacacaggcatattcttgtacgtcagtgaattagggatgaaagggacCTCTAGAACTAGTGGATCTG | Deletion construct with a homology arm to *C2\_01140C* |
| SNR52\_R\_1150 | cggtacttgttacaattaaaCAAATTAAAAATAGTTTACGCAAGTC | sgRNA synthesis against *C2\_01150W* |
| sgRNA\_F\_1150 | tttaattgtaacaagtaccgGTTTTAGAGCTAGAAATAGCAAGTTAAA | sgRNA synthesis against *C2\_01150W* |
| 1150\_NAT\_FLP\_For | agctaatatctgcaaatcaattagagtcattattatctccatcattacgatacattttggttcactatgccagtaaatatTAAAGGGAACAAAAGCTGGG | Deletion construct with a homology arm to *C2\_01150W* |
| Chr2Del\_F3 | CGAACTTGACGACCTAGACG | Genotype PCR forward primer binding at Chr2A: 6,351..6,370 |
| Chr2Del\_R4 | TCGTCACAGAACTTTAGCGG | Genotype PCR reverse primer binding at Chr2A: 7,055..7,036 |
| Chr2Del\_R5 | AAGAGGACCAACCAGTACCA | Genotype PCR reverse primer binding at Chr2A: 88,739..88,720 |
| Chr2Del\_F4 | GCCCTGCAAGTATCCAATCA | Genotype PCR forward primer binding at Chr2A: 89,570..89,589 |
| Chr2Del\_F5 | CAACCTCTCCCCAAACTCAC | Genotype PCR forward primer binding at Chr2A: 90,395..90,414 |
| Chr2Del\_R7 | GAGGTTCTGGTTCTTCGGTG | Genotype PCR reverse primer binding at Chr2A: 91,229..91,210 |
| Chr2Del\_R6 | TTGGGGTTGTTTTCCGACAT | Genotype PCR reverse primer binding at Chr2A: 185,045..185,064 |
| Chr2Del\_F6 | AACTCAGTCATTGGACACGC | Genotype PCR forward primer binding at Chr2A: 186,488..186,507 |
| 1140\_NAT\_FLP\_Rev | atcaatgcaaagcttgaaactgattattgaaactaataaaatcaggccagcaaaacttaaggagtttgatttgatatttaCTCTAGAACTAGTGGATCTG | Deletion construct with a homology arm to *C2\_01140C* |
| Chr2Del\_R8 | TTCTGTGAATGTCCCTTGCC | Genotype PCR reverse primer binding at Chr2A: 186887..186868 |
| 1300\_NAT\_FLP\_Rev | atcccagtatcatcaaaaactgttcgtcttatacttgtgtcattacttctaataacactaataaatatattggctgctttCTCTAGAACTAGTGGATCTG | Deletion construct with a homology arm to *C2\_01300C* |
| SNR52\_R\_1300 | acggtcaactttatcatcatCAAATTAAAAATAGTTTACGCAAGTC | sgRNA synthesis against *C2\_01300C* |
| sgRNA\_F\_1300 | atgatgataaagttgaccgtGTTTTAGAGCTAGAAATAGCAAGTTAAA | sgRNA synthesis against *C2\_01300C* |
| 1310\_NAT\_FLP\_For | catcaccaacaacgaaaatagttgttaaaagacgatatagtgaatttaaatctttgagagacaatttattaaaattattcTAAAGGGAACAAAAGCTGGG | Deletion construct with a homology arm to *C2\_01310W* |
| SNR52\_R\_1310 | acattaataatcccacccatCAAATTAAAAATAGTTTACGCAAGTC | sgRNA synthesis against *C2\_01310W* |
| sgRNA\_F\_1310 | atgggtgggattattaatgtGTTTTAGAGCTAGAAATAGCAAGTTAAA | sgRNA synthesis against *C2\_01310W* |
| 1420\_NAT\_FLP\_Rev | agtatgatcagaatattagtgattcagaacacgatttaacaccaatcaaaagaaagcgtcaatcagcacaatcggcaccaCTCTAGAACTAGTGGATCTG | Deletion construct with a homology arm to *C2\_01420C* |
| SNR52\_R\_1420 | ccgccagcaacaaagttttcCAAATTAAAAATAGTTTACGCAAGTC | sgRNA synthesis against *C2\_01420C* |
| sgRNA\_F\_1420 | gaaaactttgttgctggcggGTTTTAGAGCTAGAAATAGCAAGTTAAA | sgRNA synthesis against *C2\_01420C* |
| 1430\_NAT\_FLP\_For | ctaacttcccaaaagaaggaattttatttgaagatttcttaccaattttcactaagccagacttgtttaataaattagtcTAAAGGGAACAAAAGCTGGG | Deletion construct with a homology arm to *C2\_01430W* |
| SNR52\_R\_1430 | acgtgtaatttgaaagctttCAAATTAAAAATAGTTTACGCAAGTC | sgRNA synthesis against *C2\_01430W* |
| sgRNA\_F\_1430 | aaagctttcaaattacacgtGTTTTAGAGCTAGAAATAGCAAGTTAAA | sgRNA synthesis against *C2\_01430W* |
| Chr2Del\_R9 | TTGCTCGTCCCCTTTCATAC | Genotype PCR reverse primer binding at Chr2A: 221,879..221,860 |
| SNR52\_R\_1420\_new | TAGCATAGACTATATCTGTTCAAATTAAAAATAGTTTACGCAAGTC | sgRNA synthesis against *C2\_01420C* |
| sgRNA\_F\_1420\_new | AACAGATATAGTCTATGCTAGTTTTAGAGCTAGAAATAGCAAGTTAAA | sgRNA synthesis against *C2\_01420C* |
| 1420\_NAT\_Rev\_new | AAGTTTTACTCTTGAACAATCACCAGAAATAAAACCTAAACCTAAATCAAAAACTTCAGATTTAACAGATATAGTCTATGCTCTAGAACTAGTGGATCTG | Deletion construct with a homology arm to *C2\_01420C* |
| Chr2Del\_R10 | GTACAGACCGACACAACTCC | Genotype PCR reverse primer binding at Chr2A: 256,183..256,164 |
| SNR52\_R\_1460 | AGCACTTTTTAATATTTAACCAAATTAAAAATAGTTTACGCAAGTC | sgRNA synthesis against *C2\_01460C* |
| sgRNA\_F\_1460 | GTTAAATATTAAAAAGTGCTGTTTTAGAGCTAGAAATAGCAAGTTAAA | sgRNA synthesis against *C2\_01460C* |
| 1460\_NAT\_FLP\_Rev | GCAACACTTTAACAAAAAGTGTATTCATGTTCTATAAGAACAATTGAGAAGACAGAGTATAAACCCAACATTGCTTACAACTCTAGAACTAGTGGATCTG | Deletion construct with a homology arm to *C2\_01460C* |
| Chr2Del\_R11 | AACCTAGCATTGATGGAGCC | Genotype PCR reverse primer binding at Chr2A: 260,529..260,510 |
| SNR52\_R\_1500 | TTGGCATATATTGAAATACACAAATTAAAAATAGTTTACGCAAGTC | sgRNA synthesis against *C2\_01500W* |
| sgRNA\_F\_1500 | TGTATTTCAATATATGCCAAGTTTTAGAGCTAGAAATAGCAAGTTAAA | sgRNA synthesis against *C2\_01500W* |
| 1500\_NAT\_FLP\_Rev | TTCTGGTGAGTACGTAGAGAGTAATTGAGCAACAAGATCCTAAAAAAAAAAGCGTAGTCTAGTAGAGAAAAACAATTCAGCTCTAGAACTAGTGGATCTG | Deletion construct with a homology arm to *C2\_01500W* |
| Chr2Del\_R12 | ACAAAATGAGTCGGCACCAA | Genotype PCR reverse primer binding at Chr2A: 271,047..271,028 |
| 1470\_NAT\_FLP\_For | TTTAACTTCAGCTTTCTTCTGGCTACTACAATCTTCACTTACAACTAGAATTCATACTAAAAACATTCGATAGAAACATCTAAAGGGAACAAAAGCTGGG | Deletion construct with a homology arm to *C2\_01470W* |
| 1470\_NAT\_FLP\_Rev | AAGTCGTGCGAAATGGCCATACTCATTAAACCTATGTACAGCTTTCAATCTTTATCTACATATATGTGCACTAAATAATCCTCTAGAACTAGTGGATCTG | Deletion construct with a homology arm to *C2\_01470W* |
| 1480\_NAT\_FLP\_For | AACAGAGATCTCTGGTCATTAATATTCACAGCAATTTACACATCATCTCAACTATATCAAATGTCAGACAGTGATCTACCTAAAGGGAACAAAAGCTGGG | Deletion construct with a homology arm to *C2\_01480W* |
| 1480\_NAT\_FLP\_Rev | ATCAACATAAATAAACAAAGACAGTAGTGAAGAACTAACAAGGGAGCGCACTTCAGTTAGAAAAACAACATTTCTTGGTACTCTAGAACTAGTGGATCTG | Deletion construct with a homology arm to *C2\_01480W* |
| 1490\_NAT\_FLP\_For | AATACCAAATATAATTTTAATTGTTTTCACAACCTGGACAATTATGAAGAACTTCGTGCACAAAAACATCACAGTTGATATAAAGGGAACAAAAGCTGGG | Deletion construct with a homology arm to *C2\_01490C* |
| 1490\_NAT\_FLP\_Rev | TGGGCTCTAAATCGCCGTCCTCTAAACTTCCTTCGACTGCTCCAGAGAAAAGTGCATCACCTGGAGGAGCAAAGAGTGGTCTCTAGAACTAGTGGATCTG | Deletion construct with a homology arm to *C2\_01490C* |
| SNR52\_R\_770 | CAATGTCTAAAGCTTTATCTCAAATTAAAAATAGTTTACGCAAGTC | sgRNA synthesis against *C2\_00770W* |
| sgRNA\_F\_770 | AGATAAAGCTTTAGACATTGGTTTTAGAGCTAGAAATAGCAAGTTAAA | sgRNA synthesis against *C2\_00770W* |
| Chr2Del\_F7 | GAGAGTTAACGGCGTGACTT  | Genotype PCR forward primer binding at Chr2A: 131,649..131,668 |
| 770\_NAT\_FLP\_For | ACTACACCACGCTACACATTTTCTTTTATACCCCTTGAATTAACAATTCTATTTCAAACAAATACTTATAATCTTCATAATAAAGGGAACAAAAGCTGGG | Deletion construct with a homology arm to *C2\_00770W* |
| SNR52\_R\_1000 | CAGCTGTAGATGTTGATGAGCAAATTAAAAATAGTTTACGCAAGTC | sgRNA synthesis against *C2\_01000W* |
| sgRNA\_F\_1000 | CTCATCAACATCTACAGCTGGTTTTAGAGCTAGAAATAGCAAGTTAAA | sgRNA synthesis against *C2\_01000W* |
| Chr2Del\_F8 | ACACAATCACCCTACACTGC | Genotype PCR forward primer binding at Chr2A: 163,901..163,920 |
| 1000\_NAT\_FLP\_For | CCGAGTTTAGTTTCATTTTTCCTTTTTCTCTTTTTCTACATCATCCTCACAACAATTTCAAATATGTCTCAAGACAACGTTAAAGGGAACAAAAGCTGGG | Deletion construct with a homology arm to *C2\_01000W* |
| 1470\_check\_For | AGTGAAGTAGGAGACACACGA | Genotype PCR primer for detecting *C2\_01470W* allele |
| 1470\_check\_Rev | TCGACCTTGTTGTGACCAAA  | Genotype PCR primer for detecting *C2\_01470W* allele |
| 1480\_check\_For | GGTATTGACCCTGAGGTGGT | Genotype PCR primer for detecting *C2\_01480W* allele |
| 1480\_check\_Rev | TTGATCACCGGCTCTTCTGA | Genotype PCR primer for detecting *C2\_01480W* allele |
| 1490\_check\_For | CTGCTTGGAACGGAGGTATG | Genotype PCR primer for detecting *C2\_01490C* allele |
| 1490\_check\_Rev | AGCCCAATATACGACAGCAC | Genotype PCR primer for detecting *C2\_01490C* allele |
| BCY1\_For | TGTGATACCGGTCTTTTAGCA | Genotype PCR primer for detecting *BCY1* allele |
| BCY1\_Rev | CACCAGAAGGTGAGTAAGCC | Genotype PCR primer for detecting *BCY1* allele |
| BCY1\_NAT\_FLP\_For | ATGTTGCCCACAAATAAATTGTGATACCGGTCTTTTAGCATATATCTTCTACTCTTCAATCAACATCTTTACCAATGTCTTAAAGGGAACAAAAGCTGGG | *BCY1* deletion construct |
| BCY1\_NAT\_FLP\_Rev | GGTGAGTAAGCCGAAAAAAAAAAGATAGAATATACTAACATAAAACAATATAAGATAATAAACAACTACTTATTGTACACCTCTAGAACTAGTGGATCTG | *BCY1* deletion construct |
| sgMOB2\_top | atttgTTTTGAAGATAATTTTGAAGg | CRISPR plasmid cloning against *MOB2* |
| sgMOB2\_bottom | aaaacCTTCAAAATTATCTTCAAAAc | CRISPR plasmid cloning against *MOB2* |
| MOB2\_S49A\_For | ATCTGGCAATGGTTTGAGACGAACACAATCACCTACCAAGTTTgCgCCaTCAAAATTATC | Repair template synthesis for *MOB2* S49A mutation |
| MOB2\_S49A\_Rev | AGAAGACGTGTATGCAGCTGAGCCTTGTGCACCTTTTGAAGATAATTTTGAtGGcGcAAA | Repair template synthesis for *MOB2* S49A mutation |
| MOB2\_check\_For | GGCGGGTATCCATTAAGCAA | Genotype PCR primer for detecting *MOB2* allele |
| MOB2\_check\_Rev | GTTTGGTCCCGCATTCATTG | Genotype PCR primer for detecting *MOB2* allele |
| sgBNI1\_top | atttgAAAAGGACAACTGGGTCTGTg | CRISPR plasmid cloning against *BNI1* |
| sgBNI1\_bottom | aaaacACAGACCCAGTTGTCCTTTTc | CRISPR plasmid cloning against *BNI1* |
| BNI1\_S1619A\_For | TTAATGAGAAAACAAATATTGGAAAGTCAACGTAAAAGaACtACaGGaTCgGTTGGCTCA | Repair template synthesis for *BNI1* S1619A mutation |
| BNI1\_S1619A\_Rev | TGTCAGATTCATTATTTCTTGTtGGcGcGACATTAGTTGGTGAGCCAACcGAtCCtGTaG | Repair template synthesis for *BNI1* S1619A mutation |
| BNI1\_check\_For  | ACTGAGTCGATCCGTACCAT  | Genotype PCR primer for detecting *BNI1* allele |
| BNI1\_check\_Rev  | TTTATGTGTCGCCATCGTCA  | Genotype PCR primer for detecting *BNI1* allele |
| SNR52\_R\_HGC1 | AGTTCATCATGTAGTACTACCAAATTAAAAATAGTTTACGCAAGTC | sgRNA synthesis against *HGC1* |
| sgRNA\_F\_HGC1 | GTAGTACTACATGATGAACTGTTTTAGAGCTAGAAATAGCAAGTTAAA | sgRNA synthesis against *HGC1* |
| HGC1\_check\_For  | TGTGCGTTGTGCGTGTATAA  | Genotype PCR primer for detecting *HGC1* allele |
| HGC1\_check\_Rev  | GGTGAAAGTTAAATATGGTTGTTGT  | Genotype PCR primer for detecting *HGC1* allele |
| HGC1\_NAT\_FLP\_For | CATCAAAGCATCAAACCAATACCCAACACTTTAATATCTAGGGTTTCCATTCACATATACACATATAAACATATATTAATTAAAGGGAACAAAAGCTGGG | *HGC1* deletion construct |
| HGC1\_NAT\_FLP\_Rev | CATCATTAAAATTTCATATCATAATAACAACATCTTTCTCCATTCTCCATTCTCTACTTTATCTTTCTCTCTTTCTTTAACTCTAGAACTAGTGGATCTG | *HGC1* deletion construct |
| SNR52\_R\_YCK2 | TCACATAATGTAACTGCTGGCAAATTAAAAATAGTTTACGCAAGTC | sgRNA synthesis against *YCK2* |
| sgRNA\_F\_YCK2 | CCAGCAGTTACATTATGTGAGTTTTAGAGCTAGAAATAGCAAGTTAAA | sgRNA synthesis against *YCK2* |
| YCK2\_check\_For  | AATGCTACTTGGCTAATCCCA  | Genotype PCR primer for detecting *YCK2* allele |
| YCK2\_check\_Rev  | AGGAATTCCGTCACATCCTTG  | Genotype PCR primer for detecting *YCK2* allele |
| YCK2\_NAT\_FLP\_For | CGTTGAGACtTGACAACAAACCCTGCTTTGGCGGCTGCTCAAGCATCTCATAATAATATTCCTACAAAGCAAATGAATCATAAAGGGAACAAAAGCTGGG | *YCK2* deletion construct |
| YCK2\_NAT\_FLP\_Rev | GATATCATACAACTAATGACAACACAATTTAGACCAGAACCCTTTGTTTTCTTCTTCTTCGGCAACCATTTGTTGTTGTTCTCTAGAACTAGTGGATCTG | *YCK2* deletion construct |
| HGC1\_check\_Rev2 | GGTGGTGATGGTCTGTTCAT | Genotype PCR primer for detecting *HGC1* allele |