

Table S1. Primers used in this study. The template DNA undergoes the first run of PCR with forward primer F1 and backward primer tracr rev. Then the product from the first reaction undergoes the second run with forward primer F2 and backward primer tracr rev.

| Name | Sequence of the primer(5'-3') |
|---|---|
| Csy4-based <i>tyr-1</i> gRNA template | F1: TAATACGACTCACTATAGGGAGAGTTCCTGACCGTATAGGCAGGGACTGGAG |
| | F2: TATAGGCAGGGACTGGAGGACTTCTGGGGGTTTTAGAGCTAGAAA |
| Csy4-based <i>tyr-2</i> gRNA template | F1: TAATACGACTCACTATAGGGAGAGTTCCTGACCGTATAGGCAGCTGGGGAGG |
| | F2: TATAGGCAGCTGGGGAGGTGCAGACTCGGGTTTTAGAGCTAGAAA |
| Csy4-based <i>EGFP</i> gRNA template | F1: TAATACGACTCACTATAGGGAGAGTTCCTGACCGTATAGGCAGACCATCTTCT |
| | F2: TATAGGCAGACCATCTTCTTCAAGGACGAGTTTTAGAGCTAGAAA |
| Csy4-based <i>urod</i> gRNA template | F1: TAATACGACTCACTATAGGGAGAGTTCCTGACCGTATAGGCAGTCAACTCTGG |
| | F2: TATAGGCAGTCAACTCTGGAAAGTCTTTTGTTTTAGAGCTAGAAA |
| Csy4-based <i>mib</i> gRNA template | F1: TAATACGACTCACTATAGGGAGAGTTCCTGACCGTATAGGCAGAATAACCGAG |
| | F2: TATAGGCAGAATAACCGAGTGATGATGGAGTTTTAGAGCTAGAAA |
| Csy4-based <i>susd4-1</i> gRNA template | F1: TAATACGACTCACTATAGGGAGAGTTCCTGACCGTATAGGCAGTGTATCGGTC |
| | F2: TATAGGCAGTGTATCGGTCACATGGATGAGTTTTAGAGCTAGAAA |
| Csy4-based <i>susd4-2</i> gRNA template | F1: TAATACGACTCACTATAGGGAGAGTTCCTGACCGTATAGGCAGATGTATCGGT |
| | F2: TATAGGCAGATGTATCGGTCACATGGATGGTTTTAGAGCTAGAAA |
| tracr rev | AAAAAAGCACCGACTCGGTGCCAC |
| <i>tyr-1/2</i> detect loci | F: GCGTCTCACTCTCCTCGACTCTTC |
| | R: GTAGTTTCCGGCGCACTGGCAG |
| <i>EGFP</i> detect loci | F: TGAAGTTCATCTGCACCACC |
| | R: CTGCCGTCCTCGATGTTG |
| <i>urod</i> detect loci | F: CATTCCATAGCAAACAGTATGTGTG |
| | R: ATATCACAGGAGGGCTAATAATTTTG |
| <i>mib</i> detect loci | F: ATCTCTGTACGTTATATTTAC |
| | R: CCGTTATCCACACCACCACCTC |
| <i>susd4-1/2</i> detect loci | F: GTTTTACAGCATGCTCTTTACCGC |
| | R: CTGATTTACCATCTTTGACGC |
| <i>susd4</i> ss-oligo | TGGAGATTACACGTGCCACCCTCATAACATGTGACCGATACATTACGGGAC |