Supplemental Table 1: Genotyping primers used for PCR

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| Gene/allele | Primers (5’- 3’) | Product length (bp) |
| *GFP qPCR*  Figure 1C | S: ACGTAAACGGCCACAAGTTC  AS: AAGTCGTGCTGCTTCATGTG | 187 |
| *GAPDH qPCR*  Figure 1C | S: CGGGCCACGCTAATCTCAT  AS: CCTGGAACTCACCCGTTCAC | 87 |
| *E. coli* right boundary  Figure 1D | S: GGCGCGGAACTGCTCTATAA  AS: AGACAGGTGACGAGAACAGGA | ~400 |
| Transgene right boundary  Figure 1F, G | TG-S: GGTCACCATCACTCAACTCC  WT-S: TGAGGAAACATTACCAAAGGCACC  Common-AS: GCCTGTAATCCCAGTCCTGA | TG: 217  WT: 456 |
| Transgene left boundary  Figure 1H | Common-S: CCTTCCAATTCCAGTTTCCA  TG-AS: GGTCACCATCACTCAACTCC  WT-AS: GCCTGTAATCCCAGTCCTGA | TG: ~ 4kb  WT: 816 |
| *B6-Nanogtm1Hoch*  1xGFP | S: GAGAATAGGGGGTGGGTAGG  AS: CACCCCGGTGAACAGCTC | 500 |
| *Srytm1*  presence of Y | S: CTGGAGCTCTACAGTGATGA  AS: CAGTTACCAATCAACACATCAC | 350 |
| *Tg(Sry)2Ei*  presence of *Sry* | S: AGCCCTACAGCCACATGATA  AS: GTCTTGCCTGTATGTGATGG | 420 |