

Table S2. The p -values for the genotypic disequilibrium between the pairwise loci within each species (obtained with FSTAT 2.9.4). The adjusted p -value for the 5% nominal level of the Bonferroni correction is 0.000909.

| Pairwise loci | Red Deer | Sika Deer |
|-------------------------|-----------------|------------------|
| <i>OarFCB5 X T156</i> | 0.67909 | 0.64273 |
| <i>OarFCB5 X T26</i> | 0.14909 | 0.17091 |
| <i>OarFCB5 X BM888</i> | 0.12545 | 0.13727 |
| <i>OarFCB5 X RM188</i> | 0.62636 | 0.60909 |
| <i>OarFCB5 X RT1</i> | 0.22636 | 0.25545 |
| <i>OarFCB5 X T501</i> | 0.56636 | 0.59364 |
| <i>OarFCB5 X RT13</i> | 0.00727 | 0.01000 |
| <i>OarFCB5 X T193</i> | 0.97455 | 0.98000 |
| <i>OarFCB5 X BM1818</i> | 0.99818 | 0.99727 |
| <i>OarFCB5 X ETH225</i> | 0.78273 | 0.77909 |
| <i>T156 X T26</i> | 0.09364 | 0.09545 |
| <i>T156 X BM888</i> | 0.21182 | 0.19545 |
| <i>T156 X RM188</i> | 0.50545 | 0.54000 |
| <i>T156 X RT1</i> | 0.05273 | 0.06273 |
| <i>T156 X T501</i> | 0.05182 | 0.04909 |
| <i>T156 X RT13</i> | 0.35091 | 0.36818 |
| <i>T156 X T193</i> | 0.32818 | 0.32091 |
| <i>T156 X BM1818</i> | 0.98000 | 0.97182 |
| <i>T156 X ETH225</i> | 0.03455 | 0.02727 |
| <i>T26 X BM888</i> | 0.01636 | 0.02182 |
| <i>T26 X RM188</i> | 0.19909 | 0.16909 |
| <i>T26 X RT1</i> | 0.02182 | 0.01545 |
| <i>T26 X T501</i> | 0.27182 | 0.29636 |
| <i>T26 X RT13</i> | 0.01909 | 0.01091 |
| <i>T26 X T193</i> | 0.49182 | 0.47909 |
| <i>T26 X BM1818</i> | 0.55818 | 0.57727 |
| <i>T26 X ETH225</i> | 0.34909 | 0.33273 |
| <i>BM888 X RM188</i> | 0.23636 | 0.21818 |
| <i>BM888 X RT1</i> | 0.04818 | 0.04273 |
| <i>BM888 X T501</i> | 0.01364 | 0.00636 |
| <i>BM888 X RT13</i> | 0.14909 | 0.13091 |
| <i>BM888 X T193</i> | 0.06909 | 0.05727 |
| <i>BM888 X BM1818</i> | 0.58364 | 0.59091 |
| <i>BM888 X ETH225</i> | 0.94000 | 0.95455 |
| <i>RM188 X RT1</i> | 0.06455 | 0.08000 |
| <i>RM188 X T501</i> | 0.01182 | 0.00909 |
| <i>RM188 X RT13</i> | 0.09091 | 0.08455 |
| <i>RM188 X T193</i> | 0.88091 | 0.87545 |
| <i>RM188 X BM1818</i> | 0.47000 | 0.45636 |
| <i>RM188 X ETH225</i> | 0.27545 | 0.32545 |
| <i>RT1 X T501</i> | 0.48364 | 0.48182 |
| <i>RT1 X RT13</i> | 0.05091 | 0.04364 |

| Pairwise loci | Red Deer | Sika Deer |
|------------------------|-----------------|------------------|
| <i>RT1 X T193</i> | 0.11455 | 0.10727 |
| <i>RT1 X BM1818</i> | 0.96091 | 0.95545 |
| <i>RT1 X ETH225</i> | 0.37091 | 0.39364 |
| <i>T501 X RT13</i> | 0.00091* | 0.00091* |
| <i>T501 X T193</i> | 0.75364 | 0.77182 |
| <i>T501 X BM1818</i> | 0.58273 | 0.59364 |
| <i>T501 X ETH225</i> | 0.29000 | 0.29364 |
| <i>RT13 X T193</i> | 0.10909 | 0.12091 |
| <i>RT13 X BM1818</i> | 0.71364 | 0.69364 |
| <i>RT13 X ETH225</i> | 0.44818 | 0.43182 |
| <i>T193 X BM1818</i> | 0.27273 | 0.26364 |
| <i>T193 X ETH225</i> | 0.43818 | 0.43818 |
| <i>BM1818 X ETH225</i> | 0.71455 | 0.71000 |

* $p < 0.05$.