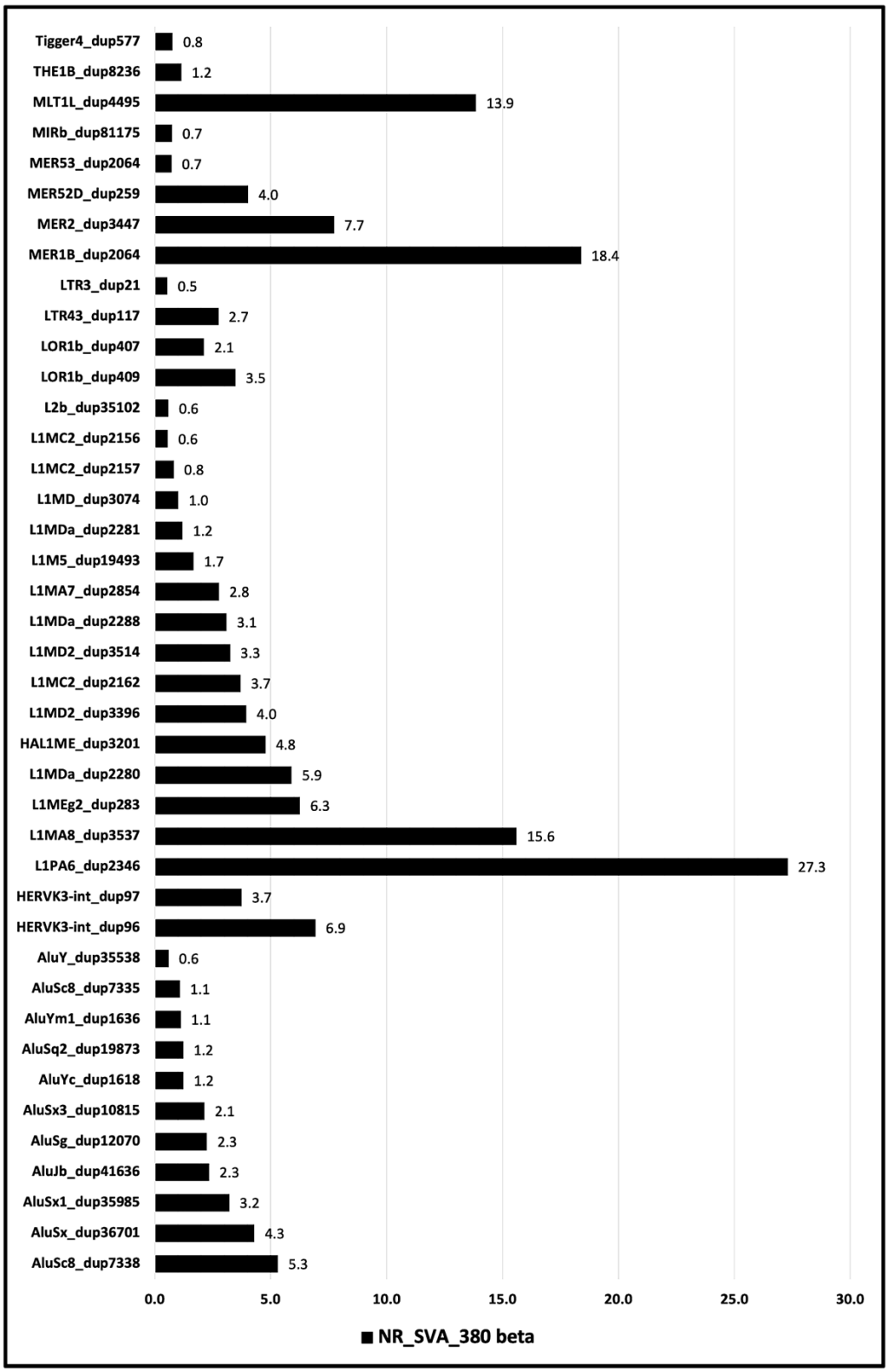
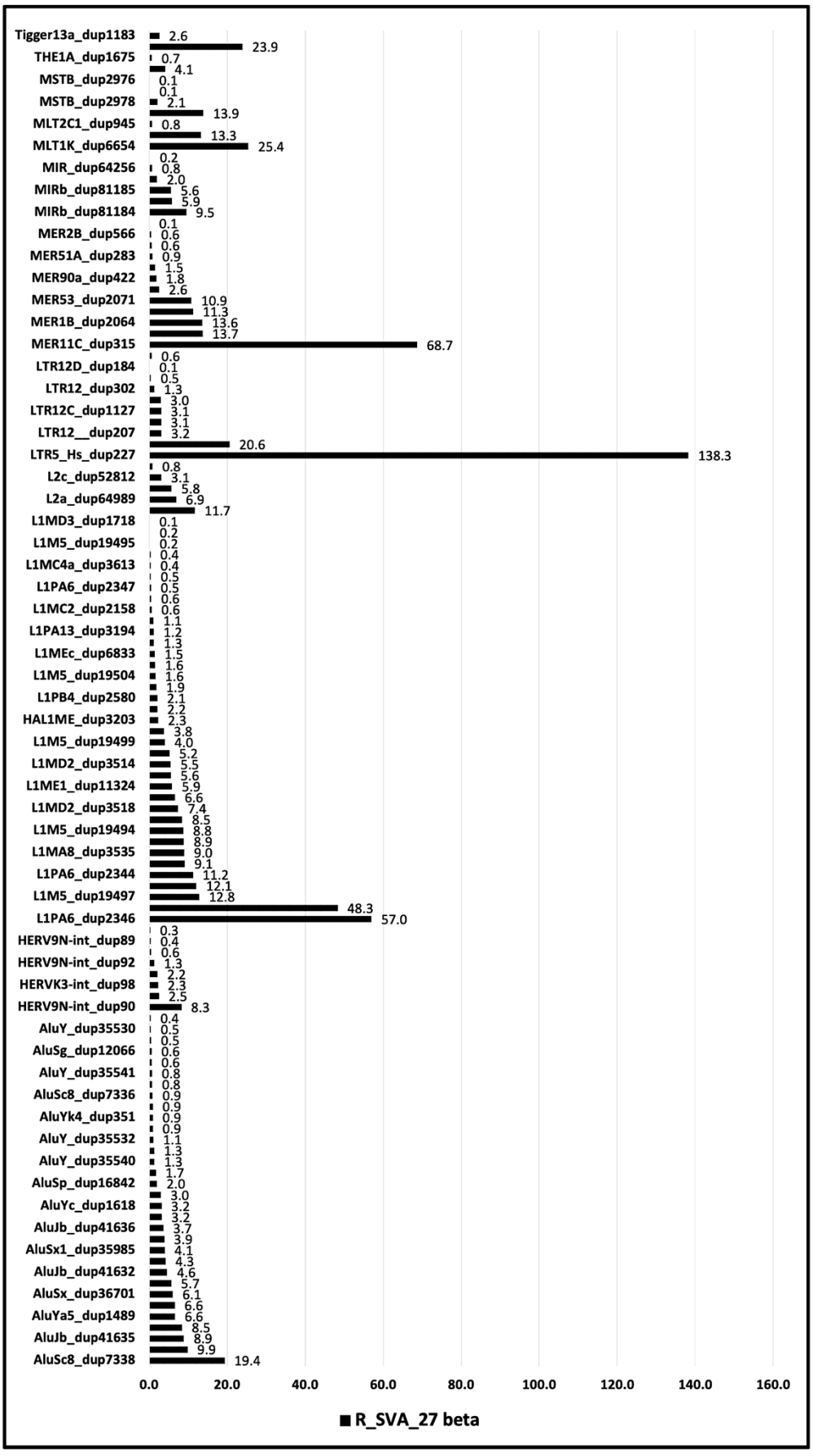
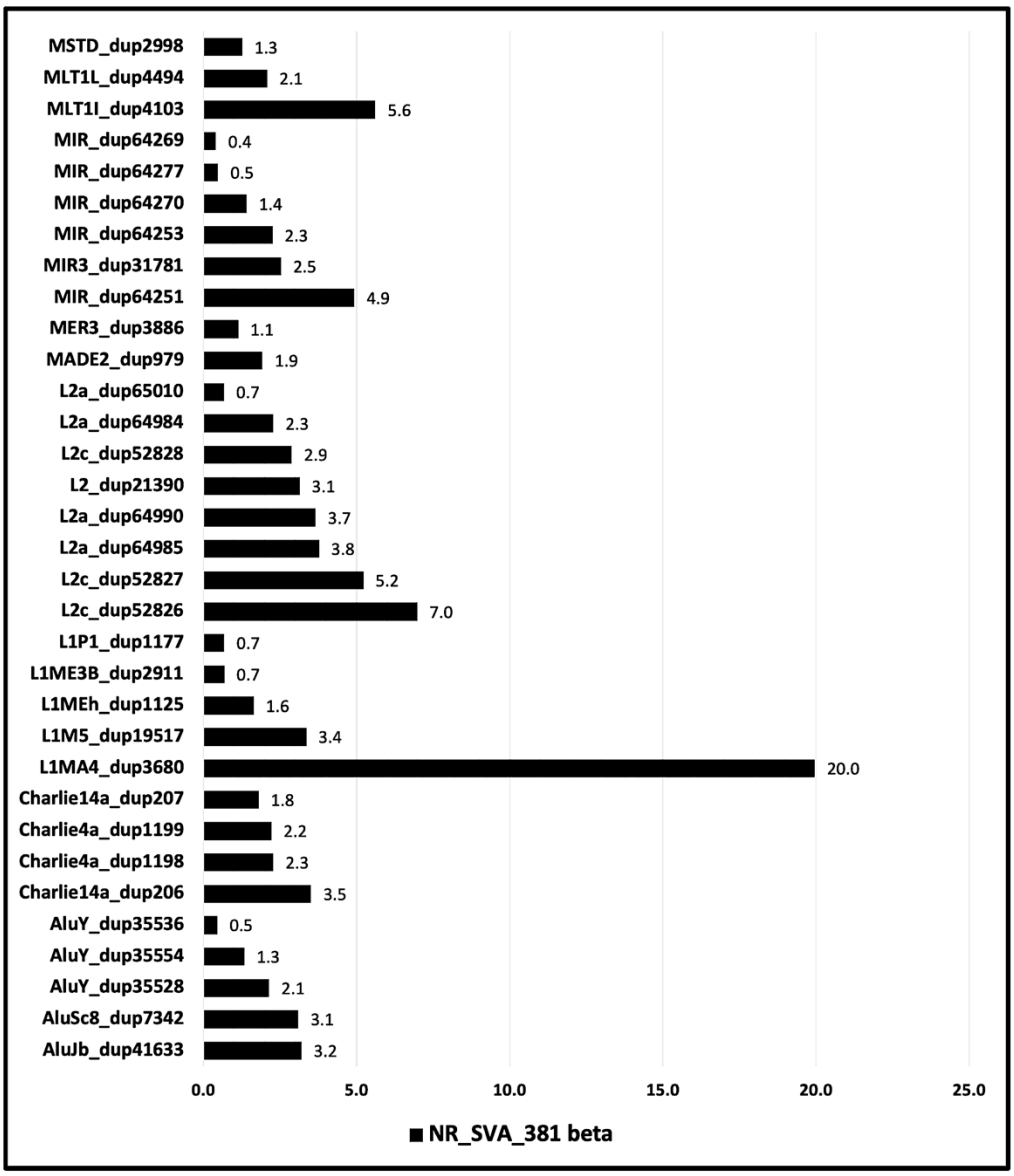
**Figure S1.** Horizontal bar plots of SVA positive association (beta effect) (X-axis) with TE expression (Y-axis) in MHC class II genomic region, (a) NR_SVA_380 positive beta effect, (b) R_SVA_27 positive beta effect, (c) NR_SVA_381 positive beta effect, and (d) R_SVA_85 positive beta effect.




(a)


Tigger13a_dup1183 2.6
THE1A_dup1675 23.9
MSTB_dup2976 0.7
MSTB_dup2978 4.1
MLT2C1_dup945 0.1
MLT1K_dup6654 0.1
MIR_dup64256 2.1
MIRb_dup81185 13.9
MIRb_dup81184 0.8
MER2B_dup566 13.3
MER51A_dup283 25.4
MER90a_dup422 0.2
MER53_dup2071 0.8
MER1B_dup2064 2.0
MER11C_dup315 5.6
LTR12D_dup184 5.9
LTR12_dup302 9.5
LTR12C_dup1127 0.1
LTR12__dup207 0.6
LTR5_Hs_dup227 0.6
L2c_dup52812 0.9
L2a_dup64989 1.5
L1MD3_dup1718 1.8
L1M5_dup19495 2.6
L1MC4a_dup3613 10.9
L1PA6_dup2347 11.3
L1MC2_dup2158 13.6
L1PA13_dup3194 13.7
L1MEc_dup6833 68.7
L1M5_dup19504 0.6
L1PB4_dup2580 0.1
HAL1ME_dup3203 0.5
L1M5_dup19499 1.3
L1MD2_dup3514 3.0
L1ME1_dup11324 3.1
L1MD2_dup3518 3.1
L1M5_dup19494 3.2
L1MA8_dup3535 20.6
L1PA6_dup2344 138.3
L1M5_dup19497 0.8
L1PA6_dup2346 3.1
HERV9N-int_dup89 5.8
HERV9N-int_dup92 6.9
HERVK3-int_dup98 11.7
HERV9N-int_dup90 0.1
AluY_dup35530 0.2
AluSg_dup12066 0.2
AluY_dup35541 0.4
AluSc8_dup7336 0.4
AluYk4_dup351 0.5
AluY_dup35532 0.5
AluY_dup35540 0.6
AluSp_dup16842 0.6
AluYc_dup1618 1.1
AluJb_dup41636 1.2
AluSx1_dup35985 1.3
AluJb_dup41632 1.5
AluSx_dup36701 1.6
AluYa5_dup1489 1.6
AluJb_dup41635 1.9
AluSc8_dup7338 2.1
2.2
2.3
3.8
4.0
5.2
5.5
5.6
5.9
6.6
7.4
8.5
8.8
8.9
9.0
9.1
11.2
12.1
12.8
48.3
57.0
0.3
0.4
0.6
1.3
2.2
2.3
2.5
8.3
0.4
0.5
0.5
0.6
0.6
0.8
0.8
0.9
0.9
0.9
0.9
1.1
1.3
1.3
1.7
2.0
3.0
3.2
3.2
3.7
3.9
4.1
4.3
4.6
5.7
6.1
6.6
6.6
8.5
8.9
9.9
19.4
0.0
20.0
40.0
60.0
80.0
100.0
120.0
140.0
160.0
R_SVA_27 beta

(b)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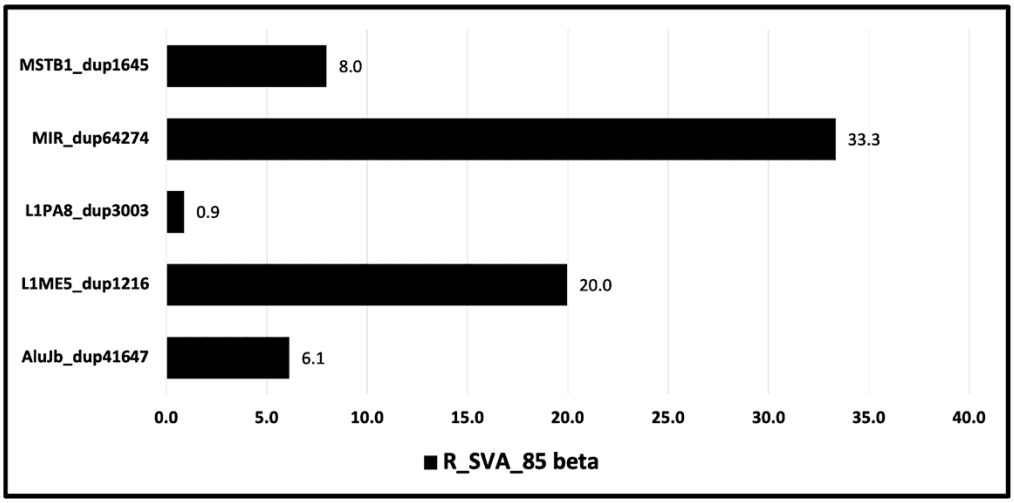
MLT1L_dup4494 2.1
MLT1I_dup4103 5.6
MIR_dup64269 0.4
MIR_dup64277 0.5
MIR_dup64270 1.4
MIR_dup64253 2.3
MIR3_dup31781 2.5
MIR_dup64251 4.9
MER3_dup3886 1.1
MADE2_dup979 1.9
L2a_dup65010 0.7
L2a_dup64984 2.3
L2c_dup52828 2.9
L2_dup21390 3.1
L2a_dup64990 3.7
L2a_dup64985 3.8
L2c_dup52827 5.2
L2c_dup52826 7.0
L1P1_dup1177 0.7
L1ME3B_dup2911 0.7
L1MEh_dup1125 1.6
L1M5_dup19517 3.4
L1MA4_dup3680 20.0
Charlie14a_dup207 1.8
Charlie4a_dup1199 2.2
Charlie4a_dup1198 2.3
Charlie14a_dup206 3.5
AluY_dup35536 0.5
AluY_dup35554 1.3
AluY_dup35528 2.1
AluSc8_dup7342 3.1
AluJb_dup41633 3.2
0.0 5.0 10.0 15.0 20.0 25.0
NR_SVA_381 beta

(c)


MSTB1_dup1645 8.0
MIR_dup64274 33.3
L1PA8_dup3003 0.9
L1ME5_dup1216 20.0
AluJb_dup41647 6.1
0.0 5.0 10.0 15.0 20.0 25.0 30.0 35.0 40.0
R_SVA_85 beta

(d)