**Supplemental Table 2.** Mean differences in fold change in expression of transposable elements during transition from acinar-to-ductal metaplasia (ADM) to pancreatic ductal adenocarcinoma (PDAC).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Unique TE ID** | **Fold Change** | **95.00% CI of diff.** | **Summary** | **Adjusted P Value†** |
| **PDAC/ADM** |
| 4.5SRNA|Rodentia | -12.38 | -16.81 to -7.944 | \*\*\*\* | <0.0001 |
| 7SK|Eutheria | -13.55 | -17.98 to -9.115 | \*\*\*\* | <0.0001 |
| 7SLRNA\_short\_|Rodentia | -14.98 | -19.41 to -10.55 | \*\*\*\* | <0.0001 |
| 7SLRNA|Eutheria | -20.22 | -24.65 to -15.78 | \*\*\*\* | <0.0001 |
| Arthur1C|Eutheria | 11.8 | 7.370 to 16.24 | \*\*\*\* | <0.0001 |
| B1\_Mm|Mus\_mouse\_genus | -10.38 | -14.82 to -5.951 | \*\*\*\* | <0.0001 |
| B1\_Mur2|Muridae | -8.903 | -13.34 to -4.470 | \*\*\*\* | <0.0001 |
| B1\_Mur4|Muridae | -14.9 | -19.33 to -10.46 | \*\*\*\* | <0.0001 |
| B1\_Mus1|Mus\_mouse\_genus | -9.189 | -13.62 to -4.756 | \*\*\*\* | <0.0001 |
| B1\_Mus2|Mus\_mouse\_genus | -4.978 | -9.412 to -0.5445 | \*\* | 0.0055 |
| B1F|Muridae | -5.587 | -10.02 to -1.153 | \*\*\* | 0.0003 |
| B1F1|Muridae | -5.311 | -9.744 to -0.8770 | \*\* | 0.0013 |
| B2\_Mm1a|Mus\_mouse\_genus | -6.307 | -10.74 to -1.874 | \*\*\*\* | <0.0001 |
| B2\_Mm1t|Mus\_mouse\_genus | -6.905 | -11.34 to -2.471 | \*\*\*\* | <0.0001 |
| B2\_Mm2|Mus\_mouse\_genus | -9.251 | -13.68 to -4.817 | \*\*\*\* | <0.0001 |
| B3A|Muridae | -5.365 | -9.799 to -0.9317 | \*\*\* | 0.001 |
| BC1\_Mm|Mus\_mouse\_genus | -9.867 | -14.30 to -5.433 | \*\*\*\* | <0.0001 |
| BGLII\_B|Muridae | -5.033 | -9.467 to -0.5995 | \*\* | 0.0044 |
| BGLII\_C|Mus\_musculus | -4.831 | -9.264 to -0.3969 | \* | 0.0103 |
| BGLII\_Mur|Murinae | 6.7 | 2.266 to 11.13 | \*\*\*\* | <0.0001 |
| BGLII\_Mus|Mus\_mouse\_genus | -8.893 | -13.33 to -4.460 | \*\*\*\* | <0.0001 |
| BGLII|Mus\_mouse\_genus | -5.019 | -9.452 to -0.5850 | \*\* | 0.0046 |
| C573\_MM|Mus\_mouse\_genus | 11.24 | 6.809 to 15.68 | \*\*\*\* | <0.0001 |
| Charlie10b|Eutheria | 7.437 | 3.003 to 11.87 | \*\*\*\* | <0.0001 |
| Charlie11|Eutheria | -4.522 | -8.955 to -0.08821 | \* | 0.0357 |
| Charlie15a|Mammalia | 7.741 | 3.307 to 12.17 | \*\*\*\* | <0.0001 |
| Charlie15b|Mammalia | 7.213 | 2.780 to 11.65 | \*\*\*\* | <0.0001 |
| Charlie18a|Mammalia | 7.126 | 2.692 to 11.56 | \*\*\*\* | <0.0001 |
| Charlie19a|Mammalia | 17.4 | 12.97 to 21.84 | \*\*\*\* | <0.0001 |
| Charlie1a|Eutheria | 12.32 | 7.885 to 16.75 | \*\*\*\* | <0.0001 |
| Charlie2a|Eutheria | 8.091 | 3.657 to 12.52 | \*\*\*\* | <0.0001 |
| Charlie5|Eutheria | 6.298 | 1.865 to 10.73 | \*\*\*\* | <0.0001 |
| Charlie7a|Eutheria | 8.867 | 4.434 to 13.30 | \*\*\*\* | <0.0001 |
| Charlie9|Eutheria | 8.67 | 4.237 to 13.10 | \*\*\*\* | <0.0001 |
| CYRA11\_Mm|Mus\_mouse\_genus | 5.14 | 0.7063 to 9.573 | \*\* | 0.0027 |
| DNA1\_Mam|Eutheria | 14.06 | 9.625 to 18.49 | \*\*\*\* | <0.0001 |
| ERV3-16A3\_LTR|Eutheria | 11.72 | 7.285 to 16.15 | \*\*\*\* | <0.0001 |
| ERVB2\_1A-I\_MM|Mus\_musculus | -4.7 | -9.133 to -0.2663 | \* | 0.0176 |
| ERVB4\_1B-I\_MM|Mus\_musculus | -8.566 | -13.00 to -4.133 | \*\*\*\* | <0.0001 |
| ERVB4\_1B-LTR\_MM|Mus\_musculus | -7.828 | -12.26 to -3.394 | \*\*\*\* | <0.0001 |
| ERVB4\_3-I\_MM|Mus\_musculus | -5.365 | -9.799 to -0.9314 | \*\*\* | 0.001 |
| ERVB5\_1-I\_MM|Mus\_mouse\_genus | -6.574 | -11.01 to -2.141 | \*\*\*\* | <0.0001 |
| ERVB5\_2-LTR\_MM|Mus\_musculus | -9.908 | -14.34 to -5.474 | \*\*\*\* | <0.0001 |
| ERVB7\_1-LTR\_MM|Mus\_musculus | -10.66 | -15.09 to -6.224 | \*\*\*\* | <0.0001 |
| ERVB7\_2-LTR\_MM|Mus\_musculus | -5.585 | -10.02 to -1.151 | \*\*\* | 0.0004 |
| ERVB7\_3-LTR\_MM|Mus\_musculus | -8.846 | -13.28 to -4.412 | \*\*\*\* | <0.0001 |
| ERVL|Eutheria | 4.776 | 0.3420 to 9.209 | \* | 0.0129 |
| ERVL-B4|Eutheria | 8.227 | 3.793 to 12.66 | \*\*\*\* | <0.0001 |
| ETnERV|Mus\_musculus | -13.26 | -17.70 to -8.829 | \*\*\*\* | <0.0001 |
| ETnERV3|Mus\_mouse\_genus | -6.783 | -11.22 to -2.350 | \*\*\*\* | <0.0001 |
| FordPrefect\_a|Eutheria | 8.037 | 3.603 to 12.47 | \*\*\*\* | <0.0001 |
| FordPrefect|Eutheria | 5.471 | 1.038 to 9.905 | \*\*\* | 0.0006 |
| HAL1ME|Mammalia | 5.947 | 1.513 to 10.38 | \*\*\*\* | <0.0001 |
| hAT-N1\_Mam|Mammalia | 12.64 | 8.207 to 17.07 | \*\*\*\* | <0.0001 |
| HERVL32|Eutheria | 6.892 | 2.458 to 11.33 | \*\*\*\* | <0.0001 |
| IAP1-MM\_I|Mus\_musculus | -5.391 | -9.824 to -0.9571 | \*\*\* | 0.0009 |
| IAP1-MM\_LTR|Mus\_musculus | -6.782 | -11.22 to -2.349 | \*\*\*\* | <0.0001 |
| IAPEY3-int|Mus\_mouse\_genus | -11.14 | -15.57 to -6.707 | \*\*\*\* | <0.0001 |
| IAPEY4\_I|Mus\_musculus | -7.862 | -12.30 to -3.429 | \*\*\*\* | <0.0001 |
| IAPEz-int|Mus\_mouse\_genus | -6.968 | -11.40 to -2.535 | \*\*\*\* | <0.0001 |
| IAPLTR1a\_Mm|Mus\_mouse\_genus | -9.808 | -14.24 to -5.374 | \*\*\*\* | <0.0001 |
| IAPLTR2\_Mm|Mus\_mouse\_genus | -8.385 | -12.82 to -3.952 | \*\*\*\* | <0.0001 |
| IAPLTR2a|Mus\_mouse\_genus | -8.461 | -12.89 to -4.028 | \*\*\*\* | <0.0001 |
| IAPLTR3-int|Mus\_mouse\_genus | 7.093 | 2.659 to 11.53 | \*\*\*\* | <0.0001 |
| IAPLTR4|Mus\_mouse\_genus | -4.861 | -9.294 to -0.4270 | \*\* | 0.0091 |
| IMPB\_01|Mus\_musculus | -10.32 | -14.75 to -5.883 | \*\*\*\* | <0.0001 |
| Kanga2\_a|Eutheria | 5.386 | 0.9522 to 9.819 | \*\*\* | 0.0009 |
| L1\_Mm\_orf2|Mus\_mouse\_genus | -9.268 | -13.70 to -4.835 | \*\*\*\* | <0.0001 |
| L1\_Mur1\_orf2|Muridae | -7.204 | -11.64 to -2.771 | \*\*\*\* | <0.0001 |
| L1\_Mur2\_orf2|Muridae | -12.28 | -16.71 to -7.844 | \*\*\*\* | <0.0001 |
| L1\_Mur3\_orf2|Muridae | 4.824 | 0.3906 to 9.258 | \* | 0.0106 |
| L1\_Mus1\_3end|Mus\_mouse\_genus | -5.13 | -9.563 to -0.6960 | \*\* | 0.0029 |
| L1\_Mus2\_3end|Mus\_mouse\_genus | -5.178 | -9.611 to -0.7443 | \*\* | 0.0023 |
| L1\_Mus3\_3end|Mus\_mouse\_genus | -5.79 | -10.22 to -1.356 | \*\*\* | 0.0001 |
| L1\_Mus3\_5end|Mus\_mouse\_genus | -9.829 | -14.26 to -5.395 | \*\*\*\* | <0.0001 |
| L1\_Mus3\_orf2|Mus\_mouse\_genus | -10.83 | -15.27 to -6.401 | \*\*\*\* | <0.0001 |
| L1\_Mus4\_3end|Mus\_mouse\_genus | -8.302 | -12.74 to -3.869 | \*\*\*\* | <0.0001 |
| L1M2\_orf2|Eutheria | 15.2 | 10.77 to 19.63 | \*\*\*\* | <0.0001 |
| L1M3b\_5end|Eutheria | 5.86 | 1.427 to 10.29 | \*\*\*\* | <0.0001 |
| L1M3e\_5end|Eutheria | 8.959 | 4.525 to 13.39 | \*\*\*\* | <0.0001 |
| L1M4\_5end|Eutheria | -5.096 | -9.529 to -0.6621 | \*\* | 0.0033 |
| L1M4a2\_5end|Eutheria | 8.614 | 4.180 to 13.05 | \*\*\*\* | <0.0001 |
| L1M4b\_5end|Eutheria | 7.312 | 2.878 to 11.75 | \*\*\*\* | <0.0001 |
| L1M5\_orf2|Eutheria | 5.069 | 0.6354 to 9.503 | \*\* | 0.0037 |
| L1M6\_5end|Mammalia | 6.336 | 1.902 to 10.77 | \*\*\*\* | <0.0001 |
| L1M6B\_5end|Mammalia | -4.644 | -9.077 to -0.2100 | \* | 0.0221 |
| L1M7\_5end|Mammalia | 8.594 | 4.160 to 13.03 | \*\*\*\* | <0.0001 |
| L1MA4\_3end|Eutheria | 6.248 | 1.814 to 10.68 | \*\*\*\* | <0.0001 |
| L1MA4A\_3end|Eutheria | 6.26 | 1.826 to 10.69 | \*\*\*\* | <0.0001 |
| L1MA5A\_3end|Eutheria | 5.089 | 0.6554 to 9.523 | \*\* | 0.0034 |
| L1MA7\_3end|Eutheria | 8.318 | 3.885 to 12.75 | \*\*\*\* | <0.0001 |
| L1MB4\_3end|Eutheria | 18.22 | 13.79 to 22.66 | \*\*\*\* | <0.0001 |
| L1MB8\_3end|Eutheria | 4.963 | 0.5296 to 9.397 | \*\* | 0.0059 |
| L1MC3\_3end|Eutheria | 5.475 | 1.042 to 9.909 | \*\*\* | 0.0006 |
| L1MC5\_3end|Eutheria | 6.716 | 2.283 to 11.15 | \*\*\*\* | <0.0001 |
| L1MCb\_5end|Eutheria | 14.39 | 9.953 to 18.82 | \*\*\*\* | <0.0001 |
| L1Md\_A\_5end|Mus\_mouse\_genus | -13.77 | -18.20 to -9.333 | \*\*\*\* | <0.0001 |
| L1Md\_F\_5end|Mus\_mouse\_genus | -4.572 | -9.006 to -0.1386 | \* | 0.0293 |
| L1Md\_F2\_3end|Mus\_mouse\_genus | -7.587 | -12.02 to -3.153 | \*\*\*\* | <0.0001 |
| L1Md\_F3\_3end|Mus\_mouse\_genus | -14.51 | -18.95 to -10.08 | \*\*\*\* | <0.0001 |
| L1Md\_Gf\_5end|Mus\_mouse\_genus | -4.861 | -9.294 to -0.4271 | \*\* | 0.0091 |
| L1Md\_T\_3end|Mus\_mouse\_genus | -5.774 | -10.21 to -1.341 | \*\*\* | 0.0001 |
| L1MDa\_5end|Eutheria | 7.155 | 2.721 to 11.59 | \*\*\*\* | <0.0001 |
| L1ME1\_3end|Eutheria | 8.506 | 4.072 to 12.94 | \*\*\*\* | <0.0001 |
| L1ME2\_3end|Eutheria | 5.381 | 0.9474 to 9.815 | \*\*\* | 0.0009 |
| L1ME3\_3end|Eutheria | 5.644 | 1.210 to 10.08 | \*\*\* | 0.0003 |
| L1ME3C\_3end|Eutheria | 11.18 | 6.744 to 15.61 | \*\*\*\* | <0.0001 |
| L1ME3D\_3end|Eutheria | 8.7 | 4.267 to 13.13 | \*\*\*\* | <0.0001 |
| L1ME4a\_3end|Eutheria | 7.357 | 2.923 to 11.79 | \*\*\*\* | <0.0001 |
| L1ME4c\_3end|Eutheria | 18.41 | 13.98 to 22.84 | \*\*\*\* | <0.0001 |
| L1MEa\_5end|Eutheria | 7.737 | 3.303 to 12.17 | \*\*\*\* | <0.0001 |
| L1MEg\_5end|Mammalia | 8.125 | 3.691 to 12.56 | \*\*\*\* | <0.0001 |
| L1MEh\_5end|Mammalia | 7.781 | 3.347 to 12.21 | \*\*\*\* | <0.0001 |
| L1VL1\_5end|Mus\_mouse\_genus | -5.026 | -9.460 to -0.5923 | \*\* | 0.0045 |
| L1VL4\_5end|Muridae | -7.488 | -11.92 to -3.054 | \*\*\*\* | <0.0001 |
| L2a\_3end|Mammalia | 10.21 | 5.773 to 14.64 | \*\*\*\* | <0.0001 |
| L4\_A\_Mam|Mammalia | 5.615 | 1.182 to 10.05 | \*\*\* | 0.0003 |
| LSU-rRNA\_Hsa|Metazoa | -14.67 | -19.10 to -10.24 | \*\*\*\* | <0.0001 |
| LTR102\_Mam|Mammalia | 9.999 | 5.565 to 14.43 | \*\*\*\* | <0.0001 |
| LTR103b\_Mam|Mammalia | 8.59 | 4.156 to 13.02 | \*\*\*\* | <0.0001 |
| LTR105\_Mam|Mammalia | 7.43 | 2.997 to 11.86 | \*\*\*\* | <0.0001 |
| LTR16B1|Eutheria | 14.21 | 9.779 to 18.65 | \*\*\*\* | <0.0001 |
| LTR16E2|Eutheria | 13.73 | 9.298 to 18.17 | \*\*\*\* | <0.0001 |
| LTR28|Eutheria | 7.23 | 2.796 to 11.66 | \*\*\*\* | <0.0001 |
| LTR33|Eutheria | 14.54 | 10.11 to 18.98 | \*\*\*\* | <0.0001 |
| LTR33C|Eutheria | 6.604 | 2.171 to 11.04 | \*\*\*\* | <0.0001 |
| LTR34|Eutheria | 11.77 | 7.337 to 16.20 | \*\*\*\* | <0.0001 |
| LTR37A|Eutheria | 4.912 | 0.4781 to 9.345 | \*\* | 0.0073 |
| LTR41B|Eutheria | 9.866 | 5.432 to 14.30 | \*\*\*\* | <0.0001 |
| LTR44|Eutheria | 10.17 | 5.735 to 14.60 | \*\*\*\* | <0.0001 |
| LTR48B|Eutheria | 4.593 | 0.1593 to 9.026 | \* | 0.027 |
| LTR52|Eutheria | 9.771 | 5.337 to 14.20 | \*\*\*\* | <0.0001 |
| LTR55|Eutheria | 4.976 | 0.5425 to 9.410 | \*\* | 0.0056 |
| LTR59|Eutheria | 4.697 | 0.2636 to 9.131 | \* | 0.0178 |
| LTR64|Eutheria | 5.381 | 0.9478 to 9.815 | \*\*\* | 0.0009 |
| LTR67B|Eutheria | -4.907 | -9.340 to -0.4732 | \*\* | 0.0075 |
| LTR73|Eutheria | 4.74 | 0.3064 to 9.174 | \* | 0.015 |
| LTR75\_1|Eutheria | 5.892 | 1.458 to 10.33 | \*\*\*\* | <0.0001 |
| LTR78|Mammalia | 5.091 | 0.6578 to 9.525 | \*\* | 0.0034 |
| LTR78B|Eutheria | 5.381 | 0.9470 to 9.814 | \*\*\* | 0.0009 |
| LTR81A|Mammalia | 8.056 | 3.623 to 12.49 | \*\*\*\* | <0.0001 |
| LTR81C|Mammalia | 9.316 | 4.882 to 13.75 | \*\*\*\* | <0.0001 |
| LTR9|Eutheria | 6.938 | 2.505 to 11.37 | \*\*\*\* | <0.0001 |
| LTRIS\_Mm|Mus\_mouse\_genus | -11.39 | -15.82 to -6.955 | \*\*\*\* | <0.0001 |
| LTRIS\_Mus|Mus\_mouse\_genus | -13.36 | -17.79 to -8.928 | \*\*\*\* | <0.0001 |
| LTRIS2|Mus\_mouse\_genus | -8.766 | -13.20 to -4.332 | \*\*\*\* | <0.0001 |
| LTRIS3|Mus\_mouse\_genus | -6.748 | -11.18 to -2.314 | \*\*\*\* | <0.0001 |
| LTRIS4B|Mus\_musculus | -7.293 | -11.73 to -2.860 | \*\*\*\* | <0.0001 |
| LTRIS5|Mus\_mouse\_genus | -8.479 | -12.91 to -4.046 | \*\*\*\* | <0.0001 |
| LTRIS6|Mus\_musculus | -7.587 | -12.02 to -3.154 | \*\*\*\* | <0.0001 |
| Lx2\_3end|Muridae | -8.301 | -12.73 to -3.867 | \*\*\*\* | <0.0001 |
| Lx3\_Mus\_3end|Mus\_mouse\_genus | -5.313 | -9.746 to -0.8792 | \*\* | 0.0013 |
| Lx3A\_3end|Muridae | -6.125 | -10.56 to -1.692 | \*\*\*\* | <0.0001 |
| Lx3C\_3end|Muridae | -9.007 | -13.44 to -4.574 | \*\*\*\* | <0.0001 |
| Lx4A\_3end|Muridae | -4.825 | -9.258 to -0.3911 | \* | 0.0106 |
| Lx4B\_3end|Muridae | -5.329 | -9.763 to -0.8956 | \*\* | 0.0012 |
| Lx5\_3end|Muridae | 5.223 | 0.7897 to 9.657 | \*\* | 0.0019 |
| Mam\_R4|Mammalia | 7.948 | 3.515 to 12.38 | \*\*\*\* | <0.0001 |
| MamGyp-int|Mammalia | 5.345 | 0.9112 to 9.778 | \*\* | 0.0011 |
| MamGypLTR1c|Mammalia | 15.06 | 10.62 to 19.49 | \*\*\*\* | <0.0001 |
| MamRep564|Eutheria | 7.417 | 2.984 to 11.85 | \*\*\*\* | <0.0001 |
| MamTip1|Mammalia | 8.445 | 4.012 to 12.88 | \*\*\*\* | <0.0001 |
| MER101B|Eutheria | 8.049 | 3.615 to 12.48 | \*\*\*\* | <0.0001 |
| MER102a|Eutheria | 8.552 | 4.118 to 12.99 | \*\*\*\* | <0.0001 |
| MER103C|Eutheria | 5.372 | 0.9385 to 9.806 | \*\*\* | 0.001 |
| MER105|Eutheria | 4.665 | 0.2312 to 9.098 | \* | 0.0203 |
| MER106A|Eutheria | 6.28 | 1.846 to 10.71 | \*\*\*\* | <0.0001 |
| MER106B|Eutheria | 8.22 | 3.786 to 12.65 | \*\*\*\* | <0.0001 |
| MER110A|Eutheria | 10.94 | 6.502 to 15.37 | \*\*\*\* | <0.0001 |
| MER112|Eutheria | 5.255 | 0.2976 to 10.21 | \* | 0.0176 |
| MER113B|Eutheria | 5.044 | 0.6101 to 9.477 | \*\* | 0.0042 |
| MER121|Mammalia | 11.28 | 6.845 to 15.71 | \*\*\*\* | <0.0001 |
| MER3|Eutheria | 7.189 | 2.756 to 11.62 | \*\*\*\* | <0.0001 |
| MER33|Eutheria | 5.219 | 0.7854 to 9.653 | \*\* | 0.0019 |
| MER34|Eutheria | 7.448 | 3.014 to 11.88 | \*\*\*\* | <0.0001 |
| MER34A|Eutheria | 9.759 | 5.325 to 14.19 | \*\*\*\* | <0.0001 |
| MER34A1|Eutheria | 4.896 | 0.4628 to 9.330 | \*\* | 0.0078 |
| MER34B-int|Eutheria | -5.189 | -9.623 to -0.7557 | \*\* | 0.0022 |
| MER44C|Eutheria | 9.189 | 4.756 to 13.62 | \*\*\*\* | <0.0001 |
| MER45A|Eutheria | 5.848 | 1.414 to 10.28 | \*\*\*\* | <0.0001 |
| MER45R|Eutheria | 4.724 | 0.2909 to 9.158 | \* | 0.0159 |
| MER47B|Eutheria | 22.85 | 18.42 to 27.28 | \*\*\*\* | <0.0001 |
| MER57D|Eutheria | 6.671 | 2.237 to 11.10 | \*\*\*\* | <0.0001 |
| MER58A|Eutheria | 5.134 | 0.7007 to 9.568 | \*\* | 0.0028 |
| MER58B|Eutheria | 10.99 | 6.552 to 15.42 | \*\*\*\* | <0.0001 |
| MER58C|Eutheria | 6.172 | 1.739 to 10.61 | \*\*\*\* | <0.0001 |
| MER5A|Eutheria\_Mammalia | 5.241 | 0.8073 to 9.674 | \*\* | 0.0017 |
| MER5A1|Eutheria | 9.772 | 5.339 to 14.21 | \*\*\*\* | <0.0001 |
| MER63B|Eutheria | 15.88 | 11.44 to 20.31 | \*\*\*\* | <0.0001 |
| MER65D|Eutheria | 4.467 | 0.03360 to 8.901 | \* | 0.044 |
| MER66A|Eutheria | 9.035 | 4.601 to 13.47 | \*\*\*\* | <0.0001 |
| MER66B|Eutheria | 11.07 | 6.632 to 15.50 | \*\*\*\* | <0.0001 |
| MER66C|Eutheria | 14.16 | 9.724 to 18.59 | \*\*\*\* | <0.0001 |
| MER67C|Eutheria | 4.638 | 0.2042 to 9.071 | \* | 0.0226 |
| MER67D|Eutheria | 8.44 | 4.007 to 12.87 | \*\*\*\* | <0.0001 |
| MER73|Eutheria | 7.267 | 2.833 to 11.70 | \*\*\*\* | <0.0001 |
| MER74A|Eutheria | 11.04 | 6.607 to 15.47 | \*\*\*\* | <0.0001 |
| MER74B|Eutheria | 6.056 | 1.623 to 10.49 | \*\*\*\* | <0.0001 |
| MER74C|Eutheria | 6.207 | 1.773 to 10.64 | \*\*\*\* | <0.0001 |
| MER76|Eutheria | 13.71 | 9.272 to 18.14 | \*\*\*\* | <0.0001 |
| MER91B|Eutheria\_Mammalia | 5.247 | 0.8138 to 9.681 | \*\* | 0.0017 |
| MER92C|Eutheria | 8.757 | 4.323 to 13.19 | \*\*\*\* | <0.0001 |
| MER96|Eutheria | 13.16 | 8.725 to 17.59 | \*\*\*\* | <0.0001 |
| MER97a|Eutheria | 12.8 | 8.363 to 17.23 | \*\*\*\* | <0.0001 |
| MER97b|Eutheria | 8.052 | 3.618 to 12.49 | \*\*\*\* | <0.0001 |
| MERV1\_I|Mus\_musculus | -8.033 | -12.47 to -3.599 | \*\*\*\* | <0.0001 |
| MERV1\_LTR|Mus\_musculus | -7.282 | -11.72 to -2.848 | \*\*\*\* | <0.0001 |
| MERVL\_2A|Rodentia | -10.34 | -14.77 to -5.908 | \*\*\*\* | <0.0001 |
| MERVL|Mus\_mouse\_genus | -6.949 | -11.38 to -2.516 | \*\*\*\* | <0.0001 |
| MIR|Mammalia | 5.719 | 1.285 to 10.15 | \*\*\* | 0.0002 |
| MLT1A|Eutheria | 8.005 | 3.571 to 12.44 | \*\*\*\* | <0.0001 |
| MLT1E1A|Eutheria | 7.675 | 3.242 to 12.11 | \*\*\*\* | <0.0001 |
| MLT1E2|Eutheria | 17.36 | 12.93 to 21.80 | \*\*\*\* | <0.0001 |
| MLT1G1|Eutheria | 5.147 | 0.7138 to 9.581 | \*\* | 0.0026 |
| MLT1J2|Eutheria | 9.79 | 5.357 to 14.22 | \*\*\*\* | <0.0001 |
| MLT2B3|Eutheria | 6.824 | 2.391 to 11.26 | \*\*\*\* | <0.0001 |
| MLT2F|Eutheria | 14.41 | 9.981 to 18.85 | \*\*\*\* | <0.0001 |
| MLT-int|Eutheria | -4.971 | -9.404 to -0.5373 | \*\* | 0.0057 |
| MLTR13|Murinae | -5.463 | -9.896 to -1.029 | \*\*\* | 0.0006 |
| MLTR25A|Mus\_musculus | -5.988 | -10.42 to -1.555 | \*\*\*\* | <0.0001 |
| MLTR31A\_MM|Mus\_musculus | 9.004 | 4.570 to 13.44 | \*\*\*\* | <0.0001 |
| MLTR31D\_MM|Mus\_musculus | -6.808 | -11.24 to -2.374 | \*\*\*\* | <0.0001 |
| MLTR31E\_MM|Mus\_musculus | 5.146 | 0.7129 to 9.580 | \*\* | 0.0026 |
| MLTR73|Murinae | 4.845 | 0.4113 to 9.278 | \*\* | 0.0097 |
| MMERGLN\_LTR|Mus\_mouse\_genus | -11.34 | -15.77 to -6.907 | \*\*\*\* | <0.0001 |
| MMERGLN-int|Mus\_mouse\_genus | -16.38 | -20.82 to -11.95 | \*\*\*\* | <0.0001 |
| MMERVK9C\_I|Mus\_musculus | -7.637 | -12.07 to -3.203 | \*\*\*\* | <0.0001 |
| MMETn-int|Mus\_mouse\_genus | -5.231 | -9.665 to -0.7977 | \*\* | 0.0018 |
| MMTV-int|Mus\_mouse\_genus | -7.599 | -12.03 to -3.166 | \*\*\*\* | <0.0001 |
| MMVL30-int|Mus\_mouse\_genus | -14.57 | -19.00 to -10.13 | \*\*\*\* | <0.0001 |
| MT2\_Mm|Mus\_mouse\_genus | -8.723 | -13.16 to -4.290 | \*\*\*\* | <0.0001 |
| MT2B|Muridae | -7.463 | -11.90 to -3.029 | \*\*\*\* | <0.0001 |
| MT2C\_Mm|Mus\_mouse\_genus | -9.018 | -13.45 to -4.584 | \*\*\*\* | <0.0001 |
| MTB\_Mm|Mus\_mouse\_genus | -6.743 | -11.18 to -2.310 | \*\*\*\* | <0.0001 |
| MTB|Muridae | -5.511 | -9.945 to -1.077 | \*\*\* | 0.0005 |
| MTC-int|Muridae | -4.75 | -9.183 to -0.3162 | \* | 0.0144 |
| MTD|Rodentia | 8.571 | 4.138 to 13.00 | \*\*\*\* | <0.0001 |
| MTE2a|Rodentia | 5.084 | 0.6506 to 9.518 | \*\* | 0.0035 |
| MT-int|Mus\_mouse\_genus | -11.42 | -15.85 to -6.987 | \*\*\*\* | <0.0001 |
| MuLV-int|Mus\_mouse\_genus | -16.7 | -21.14 to -12.27 | \*\*\*\* | <0.0001 |
| MuRRS-int|Mus\_mouse\_genus | -7.072 | -11.51 to -2.638 | \*\*\*\* | <0.0001 |
| MYSERV|Muridae | -5.276 | -9.710 to -0.8428 | \*\* | 0.0015 |
| ORR1A0|Mus\_mouse\_genus | -6.002 | -10.44 to -1.568 | \*\*\*\* | <0.0001 |
| ORR1A1|Mus\_mouse\_genus | -5.49 | -9.924 to -1.057 | \*\*\* | 0.0006 |
| ORR1A1-int|Mus\_mouse\_genus | -11.53 | -15.96 to -7.096 | \*\*\*\* | <0.0001 |
| ORR1A2|Muridae | -7.857 | -12.29 to -3.424 | \*\*\*\* | <0.0001 |
| ORR1B1|Muridae | -5.182 | -9.616 to -0.7488 | \*\* | 0.0023 |
| ORR1B1-int|Muridae | 7.176 | 2.743 to 11.61 | \*\*\*\* | <0.0001 |
| ORR1C2|Muridae | -8.437 | -12.87 to -4.003 | \*\*\*\* | <0.0001 |
| ORR1D1|Rodentia | -7.892 | -12.33 to -3.458 | \*\*\*\* | <0.0001 |
| ORR1F|Murinae | 7.858 | 3.424 to 12.29 | \*\*\*\* | <0.0001 |
| ORR1G|Murinae | 4.663 | 0.2298 to 9.097 | \* | 0.0204 |
| PB1|Rodentia | -12.11 | -16.54 to -7.673 | \*\*\*\* | <0.0001 |
| PB1D9|Rodentia | -5.322 | -9.755 to -0.8880 | \*\* | 0.0012 |
| RLTR10A|Mus\_mouse\_genus | -5.867 | -10.30 to -1.433 | \*\*\*\* | <0.0001 |
| RLTR10B|Mus\_mouse\_genus | 4.732 | 0.2981 to 9.165 | \* | 0.0155 |
| RLTR10B2|Mus\_mouse\_genus | -6.765 | -11.20 to -2.331 | \*\*\*\* | <0.0001 |
| RLTR10C|Mus\_mouse\_genus | -10.41 | -14.84 to -5.976 | \*\*\*\* | <0.0001 |
| RLTR10D2|Murinae | -8.663 | -13.10 to -4.230 | \*\*\*\* | <0.0001 |
| RLTR10-int|Muridae | -9.05 | -13.48 to -4.616 | \*\*\*\* | <0.0001 |
| RLTR11B|Muridae | -7.72 | -12.15 to -3.286 | \*\*\*\* | <0.0001 |
| RLTR11C\_MM|Mus\_musculus | 5.856 | 1.422 to 10.29 | \*\*\*\* | <0.0001 |
| RLTR12B|Muridae | 5.387 | 0.9534 to 9.821 | \*\*\* | 0.0009 |
| RLTR12C|Muridae | 8.834 | 4.401 to 13.27 | \*\*\*\* | <0.0001 |
| RLTR12F|Muridae | 7.381 | 2.947 to 11.81 | \*\*\*\* | <0.0001 |
| RLTR12H|Muridae | 9.562 | 5.128 to 14.00 | \*\*\*\* | <0.0001 |
| RLTR13B2|Mus\_mouse\_genus | -6.267 | -10.70 to -1.833 | \*\*\*\* | <0.0001 |
| RLTR13B4|Mus\_mouse\_genus | -9.479 | -13.91 to -5.046 | \*\*\*\* | <0.0001 |
| RLTR13C2|Mus\_mouse\_genus | 4.585 | 0.1513 to 9.018 | \* | 0.0279 |
| RLTR13D|Murinae | -6.226 | -10.66 to -1.792 | \*\*\*\* | <0.0001 |
| RLTR13D2|Mus\_mouse\_genus | -6.928 | -11.36 to -2.495 | \*\*\*\* | <0.0001 |
| RLTR13D3A|Mus\_musculus | 5.522 | 1.088 to 9.956 | \*\*\* | 0.0005 |
| RLTR13D4|Mus\_mouse\_genus | -8.183 | -12.62 to -3.750 | \*\*\*\* | <0.0001 |
| RLTR13D6|Mus\_mouse\_genus | -4.8 | -9.234 to -0.3668 | \* | 0.0117 |
| RLTR14\_RN|Murinae | 6.21 | 1.777 to 10.64 | \*\*\*\* | <0.0001 |
| RLTR16|Muridae | 6.232 | 1.798 to 10.67 | \*\*\*\* | <0.0001 |
| RLTR16C\_MM|Mus\_musculus | 12.64 | 8.203 to 17.07 | \*\*\*\* | <0.0001 |
| RLTR17|Muridae | -7.688 | -12.12 to -3.254 | \*\*\*\* | <0.0001 |
| RLTR19|Muridae | -4.494 | -8.927 to -0.06001 | \* | 0.0398 |
| RLTR19A|Muridae | 4.572 | 0.1386 to 9.006 | \* | 0.0293 |
| RLTR19B|Muridae | 6.713 | 2.280 to 11.15 | \*\*\*\* | <0.0001 |
| RLTR19C|Muridae | -5.381 | -9.815 to -0.9477 | \*\*\* | 0.0009 |
| RLTR19-int|Muridae | -7.08 | -11.51 to -2.647 | \*\*\*\* | <0.0001 |
| RLTR1A2\_MM|Mus\_musculus | 5.994 | 1.560 to 10.43 | \*\*\*\* | <0.0001 |
| RLTR1B|Mus\_mouse\_genus | -5.005 | -9.438 to -0.5711 | \*\* | 0.0049 |
| RLTR1B-int|Mus\_mouse\_genus | -8.011 | -12.44 to -3.578 | \*\*\*\* | <0.0001 |
| RLTR1C|Mus\_mouse\_genus | -7.365 | -11.80 to -2.932 | \*\*\*\* | <0.0001 |
| RLTR1D|Mus\_mouse\_genus | 6.611 | 2.178 to 11.04 | \*\*\*\* | <0.0001 |
| RLTR20B3|Muridae | 4.859 | 0.4249 to 9.292 | \*\* | 0.0092 |
| RLTR20B4\_MM|Mus\_musculus | -5.16 | -9.594 to -0.7266 | \*\* | 0.0025 |
| RLTR20B5\_MM|Mus\_musculus | 7.566 | 3.133 to 12.00 | \*\*\*\* | <0.0001 |
| RLTR21|Muridae | -6.859 | -11.29 to -2.425 | \*\*\*\* | <0.0001 |
| RLTR24|Muridae | 4.643 | 0.2096 to 9.077 | \* | 0.0221 |
| RLTR25A|Muridae | -4.47 | -8.903 to -0.03595 | \* | 0.0436 |
| RLTR26C\_MM|Mus\_musculus | 7.233 | 2.799 to 11.67 | \*\*\*\* | <0.0001 |
| RLTR28|Muridae | -5.98 | -10.41 to -1.547 | \*\*\*\* | <0.0001 |
| RLTR28B|Muridae | -5.311 | -9.744 to -0.8773 | \*\* | 0.0013 |
| RLTR3\_Mm|Mus\_mouse\_genus | -7.418 | -11.85 to -2.984 | \*\*\*\* | <0.0001 |
| RLTR30|Muridae | 10.39 | 5.955 to 14.82 | \*\*\*\* | <0.0001 |
| RLTR30D2\_MM|Mus\_musculus | -5.293 | -9.726 to -0.8592 | \*\* | 0.0014 |
| RLTR31C\_MM|Mus\_musculus | -6.41 | -10.84 to -1.976 | \*\*\*\* | <0.0001 |
| RLTR33|Muridae | 5.447 | 1.014 to 9.881 | \*\*\* | 0.0007 |
| RLTR4\_Mm|Mus\_mouse\_genus | -14.01 | -18.44 to -9.576 | \*\*\*\* | <0.0001 |
| RLTR4\_MM-int|Mus\_mouse\_genus | -18.33 | -22.77 to -13.90 | \*\*\*\* | <0.0001 |
| RLTR44B|Mus\_mouse\_genus | 9.766 | 5.332 to 14.20 | \*\*\*\* | <0.0001 |
| RLTR45|Mus\_mouse\_genus | -8.113 | -12.55 to -3.679 | \*\*\*\* | <0.0001 |
| RLTR45-int|Mus\_mouse\_genus | -8.27 | -12.70 to -3.836 | \*\*\*\* | <0.0001 |
| RLTR46|Muridae | 9.782 | 5.349 to 14.22 | \*\*\*\* | <0.0001 |
| RLTR46B|Mus\_musculus | -4.984 | -9.417 to -0.5500 | \*\* | 0.0054 |
| RLTR49|Mus\_musculus | -4.612 | -9.045 to -0.1783 | \* | 0.0251 |
| RLTR5\_Mm|Mus\_mouse\_genus | -5.973 | -10.41 to -1.540 | \*\*\*\* | <0.0001 |
| RLTR50B|Mus\_musculus | -7.971 | -12.40 to -3.537 | \*\*\*\* | <0.0001 |
| RLTR51A\_Mm|Mus\_musculus | -5.406 | -9.839 to -0.9721 | \*\*\* | 0.0008 |
| RLTR6\_Mm|Mus\_mouse\_genus | -12.11 | -16.55 to -7.680 | \*\*\*\* | <0.0001 |
| RLTR6B\_Mm|Mus\_musculus | -8.086 | -12.52 to -3.652 | \*\*\*\* | <0.0001 |
| RLTR6C\_Mm|Mus\_musculus | -8.366 | -12.80 to -3.933 | \*\*\*\* | <0.0001 |
| RLTR6-int|Mus\_mouse\_genus | -13.66 | -18.10 to -9.231 | \*\*\*\* | <0.0001 |
| RLTR8|Mus\_mouse\_genus | 4.622 | 0.1884 to 9.056 | \* | 0.0241 |
| RLTR9A3|Mus\_musculus | -6.859 | -11.29 to -2.426 | \*\*\*\* | <0.0001 |
| RLTR9C|Mus\_mouse\_genus | 9.812 | 5.378 to 14.25 | \*\*\*\* | <0.0001 |
| RLTR9E|Mus\_mouse\_genus | 8.744 | 4.310 to 13.18 | \*\*\*\* | <0.0001 |
| RLTR9F|Mus\_mouse\_genus | -4.621 | -9.055 to -0.1877 | \* | 0.0241 |
| RLTRETN\_Mm|Mus\_mouse\_genus | -10.47 | -14.90 to -6.036 | \*\*\*\* | <0.0001 |
| RMER10B|Muridae | -7.315 | -11.75 to -2.882 | \*\*\*\* | <0.0001 |
| RMER12C|Muridae | 5.41 | 0.9759 to 9.843 | \*\*\* | 0.0008 |
| RMER13B|Muridae | -8.171 | -12.60 to -3.738 | \*\*\*\* | <0.0001 |
| RMER15-int|Muridae | 5.315 | 0.8813 to 9.748 | \*\* | 0.0012 |
| RMER16B3|Muridae | 8.175 | 3.741 to 12.61 | \*\*\*\* | <0.0001 |
| RMER16C|Muridae | 10.55 | 6.116 to 14.98 | \*\*\*\* | <0.0001 |
| RMER16-int|Muridae | 4.821 | 0.3871 to 9.254 | \* | 0.0107 |
| RMER17A|Mus\_mouse\_genus | -8.087 | -12.52 to -3.653 | \*\*\*\* | <0.0001 |
| RMER17A2|Mus\_mouse\_genus | -8.664 | -13.10 to -4.231 | \*\*\*\* | <0.0001 |
| RMER17C|Muridae | -5.584 | -10.02 to -1.150 | \*\*\* | 0.0004 |
| RMER17C2|Muridae | -6.61 | -11.04 to -2.176 | \*\*\*\* | <0.0001 |
| RMER17D|Muridae | -9.633 | -14.07 to -5.200 | \*\*\*\* | <0.0001 |
| RMER19B2|Muridae | -6.202 | -10.64 to -1.768 | \*\*\*\* | <0.0001 |
| RMER1B|Muridae | -5.477 | -9.910 to -1.043 | \*\*\* | 0.0006 |
| RMER1C|Muridae | -5.701 | -10.13 to -1.268 | \*\*\* | 0.0002 |
| RMER21A|Muridae | -7.97 | -12.40 to -3.537 | \*\*\*\* | <0.0001 |
| RMER3D1|Muridae | 5.171 | 0.7373 to 9.605 | \*\* | 0.0024 |
| RMER3D2|Muridae | 11.52 | 7.084 to 15.95 | \*\*\*\* | <0.0001 |
| RMER3D3|Muridae | 15.71 | 11.27 to 20.14 | \*\*\*\* | <0.0001 |
| RMER3D4|Muridae | 5.11 | 0.6767 to 9.544 | \*\* | 0.0031 |
| RMER3D-int|Muridae | 8.367 | 3.934 to 12.80 | \*\*\*\* | <0.0001 |
| RMER6A|Muridae | -6.182 | -10.62 to -1.748 | \*\*\*\* | <0.0001 |
| RMER6C|Muridae | 6.15 | 1.717 to 10.58 | \*\*\*\* | <0.0001 |
| SRV\_MM-int|Mus\_mouse\_genus | -6.189 | -10.62 to -1.755 | \*\*\*\* | <0.0001 |
| SSU-rRNA\_Hsa|Metazoa | -5.233 | -9.666 to -0.7993 | \*\* | 0.0018 |
| Tigger12|Mammalia | 7.05 | 2.617 to 11.48 | \*\*\*\* | <0.0001 |
| Tigger17a|Mammalia | 5.418 | 0.9843 to 9.851 | \*\*\* | 0.0008 |
| Tigger17c|Eutheria | 7.777 | 3.343 to 12.21 | \*\*\*\* | <0.0001 |
| Tigger5b|Eutheria | 9.226 | 4.793 to 13.66 | \*\*\*\* | <0.0001 |
| Tigger8|Eutheria | 7.374 | 2.940 to 11.81 | \*\*\*\* | <0.0001 |
| Tigger9a|Mammalia | 5.884 | 1.451 to 10.32 | \*\*\*\* | <0.0001 |
| Tigger9b|Eutheria | 14.11 | 9.672 to 18.54 | \*\*\*\* | <0.0001 |
| URR1B|Muridae | 7.047 | 2.613 to 11.48 | \*\*\*\* | <0.0001 |
| Zaphod|Eutheria | 7.726 | 3.292 to 12.16 | \*\*\*\* | <0.0001 |
| Zaphod3|Eutheria | 9.741 | 5.307 to 14.17 | \*\*\*\* | <0.0001 |
| ZP3AR|Muridae | -8.405 | -12.84 to -3.971 | \*\*\*\* | <0.0001 |

†p-values adjusted using Sidak’s multiple comparisons test