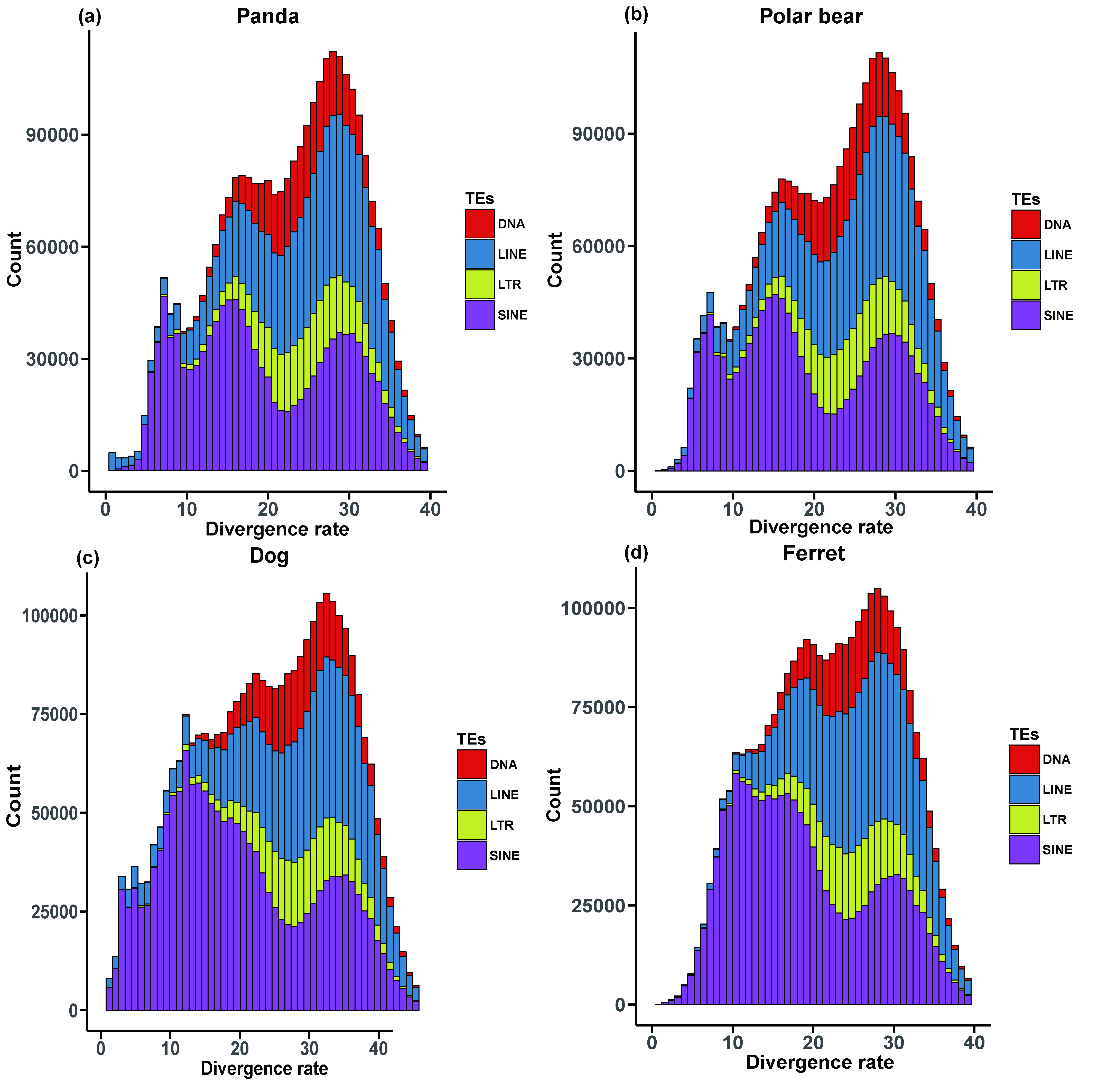
**Table S1 TEs with divergence rate <=10% in the four carnivore genomes**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Panda** |  | **Polar bear** |  | **Dog** | |  | **Ferret** | |  |
| **Types** | **Counts** | **Gp\*** | **Counts** | **Gp** | **Counts** | **Gp** | | **Counts** | **Gp** | |
| **SINE** | **226,459** | **1.83%** | **222,343** | **1.81%** | **392,978** | **2.79%** | | **214,254** | **1.54%** | |
| **LINE** | **50,453** | **1.40%** | **43,262** | **1.18%** | **59,301** | **2.25%** | | **11,290** | **0.07%** | |
| **LTR** | **3,892** | **0.06%** | **4,121** | **0.07%** | **4,208** | **0.11%** | | **1,406** | **0.01%** | |
| **DNA** | **1,260** | **0.00%** | **1,236** | **0.00%** | **954** | **0.00%** | | **816** | **0.00%** | |

**\*Gp: Genome percentage**

**Figure S1 Divergence rate distribution of four major types of TEs in panda (a), polar bear (b), dog (c), and ferret (d) genomes.** The divergence rate was calculated between their identified TE elements in the genome and the consensus sequences (Repbase).

****

**Table S2 SINE subfamilies with average divergence rate ≤10% in the panda genome**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SINE Type** | **Length (bp)** | **Percentage** | **Copy number** | **Copy number Percentage** |
| SINEC1\_AMe | 34,596,819 | 82.93% | 180,010 | 79.49% |
| SINEC1B\_AMe | 4,875,793 | 11.69% | 27,122 | 11.98% |
| SINEC\_b2 | 560,175 | 1.34% | 4,867 | 2.15% |
| SINEC\_b1 | 468,170 | 1.12% | 3,747 | 1.65% |
| tSINE\_Fc | 393,906 | 0.94% | 3,060 | 1.35% |
| SINEC2\_AMe | 246,012 | 0.59% | 2,068 | 0.91% |
| CAN | 133,085 | 0.32% | 744 | 0.33% |
| SINEC\_c1 | 127,222 | 0.30% | 796 | 0.35% |
| SINEC\_c2 | 109,892 | 0.26% | 1,079 | 0.48% |
| SINEC\_old | 67,204 | 0.16% | 760 | 0.34% |
| SINEC1C2\_CF | 28,760 | 0.07% | 187 | 0.08% |
| SINEC\_Fc3 | 20,108 | 0.05% | 410 | 0.18% |
| SINEC\_Mv | 18,987 | 0.05% | 433 | 0.19% |
| SINEC\_a1 | 15,522 | 0.04% | 59 | 0.03% |
| SINEC1C1\_CF | 13,004 | 0.03% | 89 | 0.04% |
| MIRc | 6,442 | 0.02% | 177 | 0.08% |
| MVB2 | 5,843 | 0.01% | 33 | 0.01% |
| SINEC\_Pv | 5,237 | 0.01% | 105 | 0.05% |
| MIR | 4,821 | 0.01% | 129 | 0.06% |
| MIR3 | 4,570 | 0.01% | 127 | 0.06% |
| SINEC\_a2 | 4,520 | 0.01% | 59 | 0.03% |
| MIR1\_Amn | 2,813 | 0.01% | 85 | 0.04% |
| MIRb | 2,569 | 0.01% | 69 | 0.03% |
| SINEC\_Fc2 | 2,079 | 0.00% | 32 | 0.01% |
| SINEC\_Cf2 | 1,651 | 0.00% | 27 | 0.01% |
| SINEC\_Cf3 | 1,141 | 0.00% | 16 | 0.01% |
| SINEC\_Fc | 665 | 0.00% | 9 | 0.00% |
| MamSINE | 337 | 0.00% | 7 | 0.00% |
| AmnSINE | 317 | 0.00% | 9 | 0.00% |
| SINE\_FS | 144 | 0.00% | 4 | 0.00% |
| SINEC\_Cf | 140 | 0.00% | 2 | 0.00% |
| LFSINE\_Vert | 121 | 0.00% | 4 | 0.00% |
| SINE\_OM | 72 | 0.00% | 1 | 0.00% |
| SINE\_FN | 28 | 0.00% | 1 | 0.00% |

**Table S3 SINE (including SINEC1\_AMe2) subfamilies with average divergence rates ≤10% in the panda genome**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SINE Type** | **Length(bp)** | **Percentage** | **Copy number** | **Copy number Percentage** |
| SINEC1\_AMe2 | 24,632,856 | 57.47% | 124,118 | 52.49% |
| SINEC1\_AMe | 10,803,543 | 25.20% | 60,599 | 25.63% |
| SINEC1B\_AMe | 5,140,363 | 11.99% | 28,583 | 12.09% |
| SINEC\_c2 | 611,299 | 1.43% | 7,341 | 3.10% |
| SINEC\_b2 | 572,543 | 1.34% | 5,175 | 2.20% |
| SINEC\_b1 | 423,277 | 0.99% | 2,793 | 1.18% |
| SINEC2\_AMe | 253,063 | 0.59% | 2,125 | 0.90% |
| SINEC\_old | 145,145 | 0.34% | 1,618 | 0.68% |
| SINEC\_c1 | 129,658 | 0.30% | 1,541 | 0.65% |
| SINEC\_Fc3 | 60,676 | 0.14% | 859 | 0.36% |
| SINEC\_Mv | 19,466 | 0.05% | 440 | 0.19% |
| SINEC\_a1 | 17,868 | 0.04% | 214 | 0.09% |
| SINEC\_Fc2 | 14,179 | 0.03% | 172 | 0.07% |
| MIRc | 6,442 | 0.02% | 177 | 0.07% |
| SINEC\_Pv | 6,014 | 0.01% | 113 | 0.05% |
| SINEC\_a2 | 5,009 | 0.01% | 64 | 0.03% |
| MIR | 4,731 | 0.01% | 127 | 0.05% |
| MIR3 | 4,570 | 0.01% | 127 | 0.05% |
| MIR1\_Amn | 2,813 | 0.01% | 85 | 0.04% |
| MIRb | 2,569 | 0.01% | 69 | 0.03% |
| SINEC\_Cf2 | 2,564 | 0.01% | 35 | 0.01% |
| SINE\_OM | 2,080 | 0.00% | 31 | 0.01% |
| SINEC\_Cf3 | 1,574 | 0.00% | 20 | 0.01% |
| SINEC\_Fc | 1,482 | 0.00% | 20 | 0.01% |
| MamSINE1 | 337 | 0.00% | 7 | 0.00% |
| AmnSINE1 | 317 | 0.00% | 9 | 0.00% |
| SINEC\_Cf | 195 | 0.00% | 3 | 0.00% |
| SINE\_FS | 144 | 0.00% | 4 | 0.00% |
| LFSINE\_Vert | 121 | 0.00% | 4 | 0.00% |
| SINE\_FN | 28 | 0.00% | 1 | 0.00% |