

**Table S1 A Mapping distribution over mouse exon junctions**

| Position of ESJ/ERJ | # of reads on ESJ (0mismatch) | # of reads on ESJ (1mismatch) | # of reads on ESJ (2mismatch) | # of reads on ERJ (0mismatch) | # of reads on ERJ (1mismatch) | # of reads on ERJ (2mismatch) |
|---------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| -9                  | 59,903                        | 77,254                        | 69,064                        | 5,666                         | 42,314                        | 93,168                        |
| -8                  | 67,659                        | 92,105                        | 81,193                        | 2,198                         | 23,144                        | 83,431                        |
| -7                  | 67,129                        | 88,703                        | 74,866                        | 701                           | 9,493                         | 50,763                        |
| -6                  | 72,090                        | 98,040                        | 85,596                        | 263                           | 4,175                         | 31,019                        |
| -5                  | 66,302                        | 87,085                        | 74,572                        | 93                            | 1,722                         | 16,725                        |
| -4                  | 62,455                        | 78,548                        | 65,785                        | 32                            | 786                           | 9,603                         |
| -3                  | 65,273                        | 83,024                        | 67,842                        | 20                            | 442                           | 7,369                         |
| -2                  | 69,370                        | 93,088                        | 78,713                        | 20                            | 405                           | 6,959                         |
| -1                  | 64,617                        | 83,670                        | 70,853                        | 18                            | 310                           | 6,195                         |
| 1                   | 64,043                        | 82,562                        | 70,112                        | 13                            | 295                           | 5,896                         |
| 2                   | 71,532                        | 96,224                        | 82,503                        | 16                            | 505                           | 7,792                         |
| 3                   | 66,656                        | 87,551                        | 74,045                        | 48                            | 857                           | 9,709                         |
| 4                   | 62,292                        | 78,125                        | 67,000                        | 81                            | 1,701                         | 14,592                        |
| 5                   | 59,379                        | 73,630                        | 63,126                        | 224                           | 3,323                         | 22,848                        |
| 6                   | 65,744                        | 86,024                        | 75,520                        | 731                           | 8,595                         | 42,664                        |
| 7                   | 64,872                        | 84,419                        | 75,259                        | 2,005                         | 19,564                        | 65,119                        |
| 8                   | 72,217                        | 98,716                        | 88,733                        | 6,660                         | 42,341                        | 93,601                        |
| 9                   | 69,845                        | 94,131                        | 83,452                        | 17,338                        | 63,414                        | 102,790                       |

**Table S1 B Mapping distribution over human exon junctions**

| Position of ESJ/ERJ | # of reads on ESJ (0mismatch) | # of reads on ESJ (1mismatch) | # of reads on ESJ (2mismatch) | # of reads on ERJ (0mismatch) | # of reads on ERJ (1mismatch) | # of reads on ERJ (2mismatch) |
|---------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| -10                 | 19,444                        | 7,547                         | 5,821                         | 2,087                         | 12,749                        | 17,956                        |
| -9                  | 20,195                        | 7,595                         | 5,954                         | 695                           | 7,109                         | 17,319                        |
| -8                  | 20,169                        | 7,299                         | 5,298                         | 247                           | 3,084                         | 12,028                        |
| -7                  | 20,202                        | 6,828                         | 4,591                         | 75                            | 1,179                         | 6,723                         |
| -6                  | 20,203                        | 7,048                         | 4,597                         | 43                            | 491                           | 3,237                         |
| -5                  | 20,135                        | 6,656                         | 3,845                         | 16                            | 158                           | 1,499                         |
| -4                  | 19,856                        | 6,714                         | 3,671                         | 8                             | 79                            | 638                           |
| -3                  | 20,364                        | 6,699                         | 3,764                         | 6                             | 41                            | 377                           |
| -2                  | 20,265                        | 6,789                         | 3,803                         | 8                             | 27                            | 252                           |
| -1                  | 19,846                        | 6,594                         | 3,798                         | 2                             | 18                            | 199                           |
| 1                   | 20,183                        | 6,858                         | 3,861                         | 8                             | 25                            | 178                           |
| 2                   | 20,562                        | 6,847                         | 3,953                         | 7                             | 29                            | 294                           |
| 3                   | 20,176                        | 6,722                         | 4,146                         | 5                             | 51                            | 542                           |
| 4                   | 20,199                        | 6,905                         | 4,131                         | 9                             | 124                           | 1,102                         |
| 5                   | 20,051                        | 6,911                         | 4,202                         | 24                            | 345                           | 2,474                         |
| 6                   | 19,905                        | 6,509                         | 4,400                         | 62                            | 924                           | 5,155                         |
| 7                   | 20,278                        | 7,050                         | 5,029                         | 207                           | 2,526                         | 9,804                         |
| 8                   | 20,727                        | 7,457                         | 6,120                         | 680                           | 6,217                         | 14,857                        |
| 9                   | 20,486                        | 8,260                         | 7,591                         | 2,251                         | 11,219                        | 17,446                        |
| 10                  | 20,892                        | 8,672                         | 8,708                         | 6,074                         | 15,377                        | 16,990                        |