**S1 Table. Patterns of telomere fusions (TFs) in mutants defective in telomere protection**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Genotype**  **(TF frequencies)** | **Sex** |  | **# Fused Telomeres (FTs)** | | | | | | | |
| **Total** |  | **A** | **XL** | **XR** | **4th** | **Y** | **# Eu** | **# Het** |
| ***ver1/ver1***  **(1.0)** | Male | 786 | Obs. | 564 | 42 | 10 | 116 | 54 | 606 | 180 |
| Exp. | 393 | 49 | 49 | 197 | 98 | 442 | 344 |
| Female | 1432 | Obs. | 964 | 220 | 102 | 146 | - | 1184 | 248 |
| Exp. | 716 | 179 | 179 | 358 | - | 895 | 537 |
| ***cav1/cav1***  **(4.1)** | Male | 521 | Obs. | 332 | 52 | 41 | 72 | 24 | 384 | 137 |
| Exp. | 260 | 32 | 32 | 130 | 65 | 293 | 228 |
| Female | 762 | Obs. | 494 | 76 | 94 | 98 | - | 570 | 192 |
| Exp. | 381 | 95 | 95 | 191 | - | 476 | 286 |
| ***moiM12/moiM12***  **(1.2)** | Male | 295 | Obs. | 174 | 35 | 32 | 47 | 7 | 209 | 86 |
| Exp. | 148 | 18 | 18 | 74 | 37 | 166 | 129 |
| Female | 122 | Obs. | 75 | 19 | 11 | 17 | - | 94 | 28 |
| Exp. | 61 | 15 | 15 | 31 | - | 76 | 46 |
| ***Su(var)2054/***  ***Su(var)2055***  **(4.8)** | Male | 141 | Obs. | 104 | 5 | 4 | 19 | 9 | 109 | 32 |
| Exp. | 70 | 9 | 9 | 35 | 18 | 79 | 62 |
| Female | 157 | Obs. | 89 | 31 | 10 | 27 | - | 120 | 37 |
| Exp. | 78 | 20 | 20 | 39 | - | 98 | 59 |
| ***tefuatm6/tefuatm6***  **(0.6)** | Male | 196 | Obs. | 158 | 12 | 2 | 16 | 8 | 170 | 26 |
| Exp. | 98 | 12 | 12 | 49 | 25 | 110 | 86 |
| Female | 464 | Obs. | 382 | 34 | 22 | 26 | - | 416 | 48 |
| Exp. | 232 | 58 | 58 | 116 | - | 290 | 174 |
| ***wocrgl/wocrgl***  **(2.5)** | Male | 502 | Obs. | 389 | 89 | 15 | 5 | 4 | 478 | 24 |
| Exp. | 251 | 31 | 31 | 126 | 63 | 282 | 220 |
| Female | 667 | Obs. | 522 | 121 | 18 | 6 | - | 643 | 24 |
| Exp. | 334 | 83 | 83 | 167 | - | 417 | 250 |
| ***nbs1/nbs1***  **(0.4)** | Male | 137 | Obs. | 104 | 15 | 2 | 10 | 6 | 119 | 18 |
| Exp. | 68 | 9 | 9 | 34 | 17 | 77 | 60 |
| Female | 285 | Obs. | 224 | 33 | 12 | 16 | - | 257 | 28 |
| Exp. | 142 | 36 | 36 | 71 | - | 178 | 107 |
| ***mre11DC/mre11DC***  **(0.5)** | Male | 251 | Obs. | 179 | 18 | 8 | 13 | 33 | 197 | 54 |
| Exp. | 125 | 16 | 16 | 63 | 31 | 141 | 110 |
| Female | 214 | Obs. | 150 | 43 | 11 | 10 | - | 193 | 21 |
| Exp. | 107 | 27 | 27 | 53 | - | 134 | 80 |
| ***eff*Δ*112/eff*Δ*112***  **(0.5)** | Male | 559 | Obs. | 431 | 33 | 19 | 25 | 51 | 464 | 95 |
| Exp. | 279 | 35 | 35 | 140 | 70 | 314 | 245 |
| Female | 1298 | Obs. | 1002 | 192 | 83 | 21 | - | 1194 | 104 |
| Exp. | 649 | 162 | 162 | 325 | - | 811 | 487 |
| ***peoh/peoh***  **(1.0)** | Male | 1250 | Obs. | 12 | 1 | 293 | 523 | 421 | 13 | 1237 |
| Exp. | 625 | 78 | 78 | 313 | 156 | 703 | 547 |
| Female | 906 | Obs. | 9 | 1 | 480 | 416 | - | 10 | 896 |
| Exp. | 453 | 113 | 113 | 227 | - | 566 | 340 |
| ***peoh/Df***  **(2.3)** | Male | 918 | Obs. | 159 | 1 | 168 | 290 | 300 | 160 | 758 |
| Exp. | 459 | 57 | 57 | 230 | 115 | 516 | 402 |
| Female | 1989 | Obs. | 517 | 1 | 914 | 557 | - | 518 | 1471 |
| Exp. | 994 | 249 | 249 | 497 | - | 1243 | 746 |
| ***peoh/peo1***  **(2.1)** | Male | 989 | Obs. | 281 | 1 | 249 | 279 | 179 | 282 | 707 |
| Exp. | 494 | 62 | 62 | 247 | 124 | 556 | 433 |
| Female | 1090 | Obs. | 237 | 1 | 485 | 367 | - | 238 | 852 |
| Exp. | 545 | 136 | 136 | 273 | - | 681 | 409 |
| ***peo1/ peo1; peoHA***  **(0.8)** | Male | 299 | Obs. | 94 | 9 | 33 | 81 | 82 | 103 | 196 |
| Exp. | 149 | 19 | 19 | 75 | 37 | 168 | 130 |
| Female | 624 | Obs. | 173 | 38 | 193 | 220 | - | 211 | 413 |
| Exp. | 312 | 78 | 78 | 156 | - | 390 | 234 |