**Supplementary File 1:** Direct repeat recombinant frequencies

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| --- | --- | --- | --- |
| Genotype and strain number | Number of colonies analysed | Ade+ His-(deletion)recombinantfrequency (x 10-4)a | Ade+ His+(gene conversion)recombinantfrequency (x 10-4)a |
| Mean | *P* valueb | Mean | *P* valueb |
| wild-typeMCW8020 | 23 | 419.7(+/- 127.9) | - | 182.8(+/- 78.6) | - |
| *fml1*∆MCW8300 | 20 | 1087(+/- 288.8) | <0.0001c | 64.8(+/- 26.5) | <0.0001c |
| *fml1*D196NMCW9268 | 18 | 1286(+/- 339.4) | <0.0001c | 95.1(+/- 50.0) | <0.001c |
| *fml1*K99RMCW9281 | 16 | 1539(+/- 605.9) | <0.0001c | 76.3(+/- 36.4) | <0.0001c |
| *fml1*∆CMCW9266 | 19 | 763.3 (+/- 256.3) | <0.0001c | 64.2 (+/- 41.9) | <0.0001c |
| *rad51*∆MCW8296 | 22 | 198.0 (+/- 72.16) | <0.0001c | 8.03 (+/- 6.81) | <0.0001c |
| *fml1*∆ *rad51*∆MCW9496 | 22 | 1659(+/- 785.0) | <0.0001c<0.0001d | 11.82 (+/- 10.67) | <0.0001c<0.3037d |
| *mhf2*D87AMCW9220 | 17 | 588.7(+/- 194.4) | <0.01c | 122.6(+/- 67.5) | <0.05c |
| *fml1*AAAMCW9283 | 16 | 677.6(+/- 310.8) | <0.001c | 154.6(+/- 45.7) | 0.2050c |
| *mhf2*D87A*fml1*AAAMCW9269 | 18 | 893.5(+/- 193.7) | <0.0001c | 99.4(+/- 40.9) | <0.001c |

a The values in parentheses are the standard deviations about the mean.

b *P* values are derived from the Mann-Whitney U test comparing the mean values as indicated.

c Compared to the equivalent mean recombinant frequency in MCW8020.

d Compared to the equivalent mean recombinant frequency in MCW8296.