

Supplementary Table 8. Rates of 1L and 2L chromosome loss calculated using fluctuation analysis. Light grey rows denote Theoretical 2L rate predictions calculated from empirically-derived 1L rates for each chromosome in the denoted genetic background.

**S288c/JAY291 Hybrid Rates (Figure 2B)**

Selection	Rate	Lower 95% difference	Upper 95% difference	Number of Cultures
Chr1	4.89E-07	2.06E-07	1.77E-07	39
Chr3	9.27E-07	2.14E-07	1.97E-07	40
Chr5	1.26E-06	3.04E-07	2.77E-07	144
Chr9	1.89E-07	5.24E-08	4.75E-08	40
Chr12	2.16E-08	8.10E-09	7.06E-09	40
Theoretical Chr1+Chr5	6.17E-13	6.24E-14	4.92E-14	
Observed Chr1+Chr5	7.44E-10	4.30E-10	5.54E-10	39
Theoretical Chr3+Chr5	1.17E-12	6.49E-14	1.75E-13	
Observed Chr3+Chr5	1.79E-09	8.72E-10	7.34E-10	40
Theoretical Chr9+Chr5	2.39E-13	1.59E-14	1.32E-14	
Observed Chr9+Chr5	1.49E-10	3.88E-11	2.67E-11	65
Theoretical Chr12+Chr5	2.73E-14	2.46E-15	1.96E-15	
Observed Chr12+Chr5	1.05E-10	8.68E-11	6.45E-11	40

**S288c/S288c Isogenic Rates (Figure S1A)**

Selection	Rate	Lower 95% difference	Upper 95% difference	Number of Cultures
Chr1	3.83E-08	9.82E-09	8.97E-09	15
Chr3	1.73E-07	3.25E-08	3.04E-08	15
Chr5	2.41E-07	2.27E-07	8.26E-08	60
Chr9	1.88E-07	5.24E-08	4.75E-08	15
Chr12	5.06E-08	2.01E-08	1.75E-08	15
Theoretical Chr1+Chr5	9.24E-15	2.23E-15	7.41E-16	
Observed Chr1+Chr5	n/a	n/a	n/a	n/a
Theoretical Chr3+Chr5	4.17E-14	7.38E-15	2.26E-14	
Observed Chr3+Chr5	1.45E-10	1.21E-10	9.07E-11	30
Theoretical Chr9+Chr5	4.53E-14	1.19E-14	3.92E-15	
Observed Chr9+Chr5	1.27E-10	1.46E-10	9.90E-11	15
Theoretical Chr12+Chr5	1.22E-14	4.56E-15	1.44E-15	
Observed Chr12+Chr5	5.08E-11	7.76E-11	4.59E-11	30
Theoretical Chr1+Chr3	6.63E-15	3.19E-16	2.73E-16	
Observed Chr1+Chr3	1.37E-10	1.50E-10	1.02E-10	30
Theoretical Chr1+Chr9	7.21E-15	5.15E-16	4.26E-16	
Observed Chr1+Chr9	7.10E-11	1.14E-10	6.56E-11	15
Theoretical Chr1+Chr12	1.94E-15	1.97E-16	1.57E-16	
Observed Chr1+Chr12	6.70E-11	1.06E-10	6.16E-11	30

**S288c/YJM789 Hybrid Rates (Figure S1B)**

Selection	Rate	Lower 95% difference	Upper 95% difference	Number of Cultures
sChr1	4.6E-06	7.2E-07	1.3E-06	48
sChr3	1.8E-06	3.7E-07	4.5E-07	48
Chr5	1.7E-06	4.2E-07	4.4E-07	68
Theoretical Chr1+Chr3	9.6E-12	3.1E-13	6.7E-13	
Observed Chr1+Chr3	8.2E-09	3.0E-09	3.5E-09	20
Theoretical Chr1+Chr5	9.0E-12	3.6E-13	6.5E-13	
Observed Chr1+Chr5	1.4E-08	4.5E-09	5.1E-09	63
Theoretical Chr3+Chr5	4.2E-12	2.1E-13	2.8E-13	
Observed Chr3+Chr5	8.5E-09	2.5E-09	4.1E-09	76

**S288c/JAY291 Sequential Loss Rates (Figure 2C)**

Selection	Rate	Lower 95% difference	Upper 95% difference	Number of Cultures
Expected Chr1--> Chr5	1.45E-03	9.38E-04	1.81E-03	
Observed Chr1--> Chr5	1.57E-05	4.63E-06	5.21E-06	9
Expected Chr3--> Chr5	1.93E-03	1.45E-03	2.33E-03	
Observed Chr3--> Chr5	1.03E-05	2.68E-06	2.97E-06	10
Expected Chr9--> Chr5	7.91E-04	3.16E-04	1.20E-03	
Observed Chr9--> Chr5	3.76E-06	1.23E-06	1.40E-06	9
Expected Chr5--> Chr3	1.42E-03	1.07E-03	1.70E-03	
Observed Chr5--> Chr3	4.42E-06	1.80E-06	2.12E-06	10
Theoretical Chr5--> Chr9	1.18E-04	4.91E-05	1.85E-04	
Observed Chr5--> Chr9	1.39E-06	4.81E-07	5.53E-07	10