**Note S1.** Strains A9, B1, and B9 all grew slowly after O/N incubation, so all 5mL from each culture was transferred to 5mL of YPD and incubated an additional 3h at 30°C at 250 RPM. During this time, the rest of the haploid strains remained at RT. For mating, 200uL of culture from these slow-growing strains was mixed with 100uL of culture from the rest of the haploid strains.

**Note S2**. Before taking OD630 measurements, the following crosses were accidentally combined: A5xB6 with A5xB7, A6xB2 with A6xB3, A6xB8 with A6xB4, and A11xB7 with A11xB6. To correct for this, twice of much of the combined cultures were added to the final spore pool after normalizing cell density.

**Note S3.** Founder strains A5, A7-A9, A11, A12 and B5-B12 (excluding B10) were sequenced using PE100 reads, while founders A1-A4 and A6 were sequenced using PE150 reads.

**Note S4**. In one of the recombinant haploid clones derived from 18F12v2 (rhc 10), the entirety of chromosome I was called as unknown. Closer examination showed that this chromosome is duplicated and heterozygous for two founding strains, suggesting a partial diploidization event.