



**Figure S2** (A) Examples of genetic linkage profiles of query and array mutants involving the same genomic locus. A genetic linkage profile is defined as the set of genetic distances, measured in SGA-GD (Methods), between a given locus and all other loci present on the same chromosome. The reproducibility of genetic linkage profiles is assessed by systematically comparing two independent experiments: in one experiment, the locus of interest has been deleted using the *natMX4* selectable marker (“query” mutant); in the other experiment, the locus of interest has been deleted using the *kanMX* selectable marker (“array” mutant). (B) Distribution of Pearson correlation coefficients among the genetic linkage profiles of ~2,800 query-array mutant pairs. Each pair corresponds to two independent experiments for a given genomic locus. (C) Genetic linkage profiles for 9 consecutive genes located on chromosome XV. Consecutive loci are expected to have similar genetic linkage profiles because they are likely to experience similar local recombination rates. (D) Distribution of Pearson correlation coefficients for ~3,700 pairs of genetic linkage profiles involving consecutive genomic loci.