

Supporting Table S2: Tetrads genotyped

Data for *tel1Δ*, *zip3Δ tel1Δ*, and two out of six *zip3Δ sgs1Δ* tetrads have been deposited in NIH Sequence Read Archive under accession number SRP044001. Data for wild type, *sgs1Δ*, *zip3Δ*, *msh4Δ*, and four out of six *sgs1Δ zip3Δ* tetrads were previously deposited under accession numbers SRP028549 (wild type) and SRP041214 (all other strains).

Genotype	Tetrads sequenced with high coverage	Tetrads sequenced with lower coverage	Tetrads genotyped by microarray	Notes
wildtype	wtx29 wtx30 wtx46 wtx63 wtx64 wtx65			Data from 46 tetrads genotyped by high-density tiling array by Mancera et al. (2008) were also used.
<i>tel1Δ</i>	tel1x6 tel1x7 tel1x10 tel1x11 tel1x12 tel1x15 tel1x16 tel1x18	tel1x5 tel1x14 tel1x17 tel1x19	tel1x2 tel1x13	
<i>sgs1Δ</i>	sgs1x2 sgs1x7 sgs1x8 sgs1x30 sgs1x32 sgs1x33 sgs1x34 sgs1x35 sgs1x36	sgs1x29 sgs1x31	sgs1x3 sgs1x9	
<i>zip3Δ</i>	zip3x262 zip3x265 zip3x268 zip3x274 zip3x276 zip3x289 zip3x295	zip3x269 zip3x271 zip3x272	zip3x251, 254, 255, 256, 257, 264, 266, 273, 275, 277, 278, 290, 292, 296, 297, 298, 299, 300, 301, 303	

Genotype	Tetrads sequenced with high coverage	Tetrads sequenced with lower coverage	Tetrads genotyped by microarray	Notes
<i>msh4</i> Δ	msh4x1 msh4x2 msh4x3 msh4x4 msh4x5 msh4x6 msh4x8			Data from 5 tetrads genotyped by high-density tiling array by Mancera et al. (2008) were also used.
<i>zip3</i> Δ <i>tel1</i> Δ	zip3tel1x1 zip3tel1x2 zip3tel1x3 zip3tel1x5 zip3tel1x14 zip3tel1x19			
<i>zip3</i> Δ <i>sgs1</i> Δ	zip3sgs1x2 zip3sgs1x4 zip3sgs1x5 zip3sgs1x7 zip3sgs1x8 zip3sgs1x10			