**FIGURE S1.**—Genotypes of EP parthenogenetic offspring of *asm+/−* females. Co-segregation of the *asm* mutation and its parental centromere can be disrupted by recombination. (A) The maternal genotype. (B-E) The left side of each panel shows diagrams of recombination at the four-strand bivalent stage of Meiosis I, with newly replicated sister chromatids joined by a shared centromere; the right side of each panel shows the genotypes of the half-tetrad offspring that could be produced following the recombinations. (B) In the absence of crossovers between the locus of the mutation and its centromere, all heterozygous markers in the interval will segregate at Meiosis I and only homozygous half-tetrads, *asm−/−* mutant or *asm+/+* wild-type, will be produced. Resulting mutant EP offspring will carry only the parental linked allele at the centromere, representing a Parental Ditype (PD). (C) Single crossover produces only *asm+/−* half-tetrads, which may be homozygous for either centromere. Homozygous mutant EP offspring can also be produced following *deo*. (D) Two-strand *deo* results in regions of heterozygosity, but preserves the parental association of telomeric and centromeric markers; (E) Four-strand *deo* results in *asm−/−* or *asm+/+* half-tetrads, but now only non-parental combination of the mutation and the centromere, a Non-Parental Ditype (NPD), are observed. Chromatid arms are red if descended from the *asm* founder chromosome or black if descended from the wild-type chromosome. Centromeres are shown as open circles or ovals. The upper arm of each chromatid is truncated for clarity.