**Figure S3 - Schematic representation of single-strand annealing (SSA) assays.**

**A** In the YMV45 strain, the HO-cut site is flanked by homologous *leu2* sequences that are 4.6 kb apart. HO-induced DSB formation results in generation of 12 kb and 2.5 kb DNA fragments (HO-cut) that can be detected by Southern blot analysis of KpnI-digested genomic DNA with a *LEU2* probe. DSB repair by SSA generates a product of 8 kb (product). K, KpnI.

**B** In the YMV80 strain, the HO-cut site is flanked by homologous *leu2* sequences that are 25 kb apart. HO-induced DSB formation results in generation of a 2.5 kb DNA fragment (HO-cut) that can be detected by Southern blot analysis of KpnI-digested genomic DNA with a *LEU2* probe. DSB repair generates a 3.5 kb DNA product (product).