A screen for a suppressor of a conditional *dmc1* mutant reveals a new yeast meiotic protein

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The eukaryotically conserved protein Dmc1 is necessary for proper meiotic recombination. Meiotic recombination is mediated by other accessory factor proteins, which interact with Dmc1 to form the "recombinosome." To characterize novel proteins that are part of the recombinosome of the budding yeast Saccharomyces cerevisiae we first utilized a mutagenesis screen to discover a temperature sensitive *dmc1* mutant (*dmc1-ts10*). A second mutagenesis screen, in a *dmc1 dmc1-ts10* background, revealed a repressive suppressor (*sup12*) of *dmc1-ts10* that rescued the temperature sensitive phenotype. That finding indicated that the protein expressed by the wild-type allele of *sup12* might interact with Dmc1 during recombination. Using a specific chromosome loss technique we narrowed down the location of *sup12* to chromosome XV. Positional cloning of a 20 kb region of chromosome XV, which linkage analysis indicated that *sup12* was located in, revealed a stop codon mutation of SOG2 that caused a C-terminal truncation of 65 amino acids. We showed that a *sog2* haploid did not complement a *sup12* haploid, which indicated that *sup12* is in fact an allele of SOG2. A novel finding is that *sog2* knockouts have meiotic progeny with drastically lowered viability, further suggesting a role for Sog2 in meiotic recombination. This study indicates that Sog2 might interact with Dmc1 and have a role in meiotic recombination, novel discoveries that we must confirm with future experiments.