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Regulation of Meiotic Recombination by *IME2* and *SIC1* in *Saccharomyces cerevisiae*

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In meiosis, the G1-to-S phase transition is controlled differently. The temperature-sensitive(ts) CDK mutant that blocks mitotic S phase, *cdc28-4*, has no role effect on meiotic S phase. This different effect at cell cycle is explained that the meiosis-specific kinase encoded by *IME2* which has sequence similarity to Cdc28, is required for meiotic S phase. While CDK inhibitor Sic1 blocks entry into meiotic S phase which has no role in mitosis, and Ime2 may control by mediating disruption of Sic1. Therefore, these genes might be coupled in early meiotic pathway. To understand their relationship on the early meiotic pathway including meiotic recombination, we constructed *ts ime2* mutants and *sic1* disruptant. By PCR mutagenesis, we isolated three *ts ime2* mutants. Three mutants were determinated the frequency of meiotic recombination and formation of meiosis-specific DNA breaks(DSBs). As results, they showed the reduction in meiotic recombination and DSBs formation under restrictive condition, suggesting it functioned at the meiotic recombination pathway. Now, we have examined the effect of *sic1*Δ and *sic1*Δ *ime2*Δ disruptants in meiotic recombination.