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Identification of Novel Meiotic Genes Via a Genetic Screen

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Identification of novel meiotic genes via a genetic screen

College of Sciences and Health Professions

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Abstract

Proper segregation of chromosomes in Meiosis I requires proper function of the Synaptonemal Complex (SC), a zipper-like protein structure that facilitates recombination events and segregation of homologous chromosomes. In yeast, Zip1 is the gene that codes for the SC. Zip1C1 is an allele with 33 missing amino acids on the C terminus of the gene whose phenotype is cell arrest in Meiosis. We are conducting a multicopy suppression screen in an effort to discover genes which, when overexpressed, can rescue the cell arrest phenotype of Zip1C1. The screen requires the reproduction of all genes in the yeast genome overexpressed in single colonies and testing for suppression of our mutant phenotype. Candidates which suppress the phenotype show sporulation and fluorescence on media, and have higher spore viabilities compared to our Zip1C1 control.