Plasmids for in vivo construction of integrative Candida albicans vectors in Saccharomyces cerevisiae

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A general system has been devised for the in vivo construction of Candida albicans integrative vectors in Saccharomyces cerevisiae. The system is especially useful for the integration of genes in C. albicans that cannot be propagated in Escherichia coli possibly because of their toxic effects. The ligation of S. cerevisiae 2μ sequences to a C. albicans integrative vector permits in vivo maintenance and gap repair cloning within S. cerevisiae. After the vector assembly, it can be purified from S. cerevisiae or amplified by PCR and then used for transformation of C. albicans. The S. cerevisiae 2μ sequence is completely removed by linearization prior to C. albicans transformation, such that no unwanted DNA is transferred in the final construct. The system was successfully used to clone and reintegrate the C. albicans JEN2 gene, which encodes a membrane protein that is apparently toxic to E. coli. Three popular C. albicans integrative vectors Clp10, Clp20 and Clp30 are now available in versions that permit gap repair in S. cerevisiae. GenBank Accession Nrs: Clp10-2μ (GU550119), Clp20-2μ (GU550120) and Clp30-2μ(GU550121).