

# CRISPR-Cas9 Facilitated Multiple-Chromosome Fusion in *Saccharomyces cerevisiae*

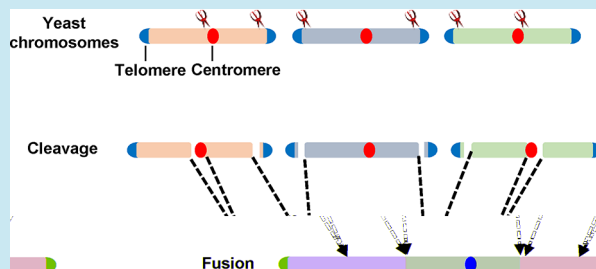
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<sup>†</sup>K. La ... CA C ... E ... M ... ai I ...

<sup>‡</sup> ... C i A ... B i i 100049, C i a

## Supporting Information

**ABSTRACT:** ... CRISPR-Cas9 ... *Saccharomyces cerevisiae*. ... 75% ... 50% ... 100%. D ...



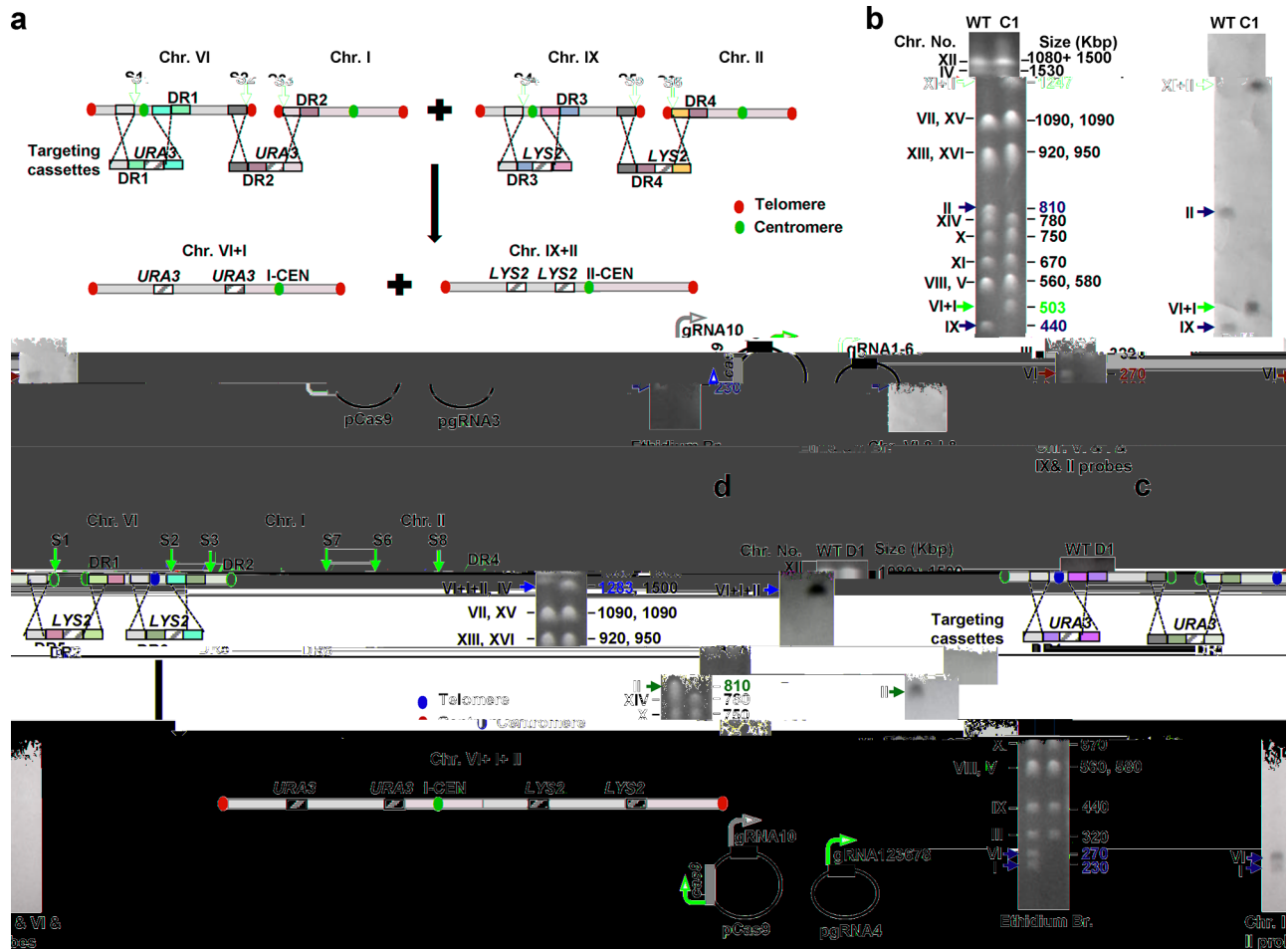
**E** ... *Saccharomyces cerevisiae* ... URA3 ... D ... 100% ...

## RESULTS AND DISCUSSION

(270), I (230), I (440), ... II (813) ... *S. cerevisiae* ... B 4742 ... D ...

**M** ... (LiA) ... (URA3 ... LYS2) ... 75% ... 50% (2/4) ...

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**Figure 1.** (a) Schematic of chromosome fusion strategy. Chromosomes VI and IX are fused to form Chromosome VI+I, and Chromosomes I and II are fused to form Chromosome I+II. Targeting cassettes (URA3, LYS2) and centromeres are used for identification. (b) Southern blot analysis of WT and C1 strains for various chromosome fusions. (c) Detailed genomic map of Chromosome VI+I and Chromosome I+II, including the use of gRNAs and CRISPR-Cas9 systems. (d) Targeting strategy for Chromosome VI+I and Chromosome I+II, including the use of gRNAs and CRISPR-Cas9 systems.

**Table 1. Efficiency of the Chromosome Fusions**

Strain	Chromosome	Efficiency (%)			
		1 <sup>a</sup>	2 <sup>b</sup>	3 <sup>b</sup>	4 <sup>b</sup>
A	I	270	503	60 (2/4)	56 (4/4)
	II	230	503	60 (2/4)	56 (4/4)
B	I	440	1247	36 (3/4)	124 (4/4)
	II	813	1247	36 (3/4)	124 (4/4)
C	I	270	503	0	10 (3/4)
	I	230	503	0	10 (3/4)
	I	440	1247	0	10 (3/4)
	II	813	1247	0	10 (3/4)
D	I	270	503	0	34 (2/4)
	I	230	1283	0	34 (2/4)
	II	813	1283	0	34 (2/4)

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 i ffi i i ,  
 a (a 1). i i a (URA3  
 a LYS2)  
 i i a Aa B - i i  
 i i i a 100% (4/4). I -  
 a , a i a (URA3) a  
 i , i i a 50–75% (2/4 3/4).  
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 a i C I -Ca 9 a i i i-  
 a i i *S. cerevisiae*. a a i i  
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## ■ ASSOCIATED CONTENT

### 📄 Supporting Information

i I a i i a i a a  
 AC i a i i a D I: 10.1021/a i .8 00397.  
 M a a i i a a ( DF)

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### Notes

a a i fi a i a i .

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i a a a C i  
 A a i ( DB19000000, 153D31K B20160074),  
 a i a a i F a i C i a (31830105,  
 31770099), a a a i a (18JC1420200).

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