

研究报告

稻属不同染色体组着丝粒BAC克隆的分离和鉴定

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摘要

着丝粒在真核生物有丝分裂和减数分裂染色体正常的分离和传递中起着重要的作用。通过构建5个稻属二倍体野生种的基因组BAC文库, 采用菌落杂交和FISH技术, 筛选和鉴定了各染色体组着丝粒克隆, 并且分析了这些克隆在不同基因组间的共杂交情况, 结果表明: (1) C染色体组的野生种*O. officinalis* 和F染色体组的野生种*O. brachyantha*具有各自着丝粒特异的卫星DNA序列, 并且*O. brachyantha*着丝粒还具有特异的逆转座子序列; (2) A、B和E染色体组的野生稻*O. glaberrima*、*O. punctata*和*O. australiensis*着丝粒区域都含有与栽培稻着丝粒重复序列CentO和CRR同源的序列; (3) C染色体组野生稻*O. officinalis*的2条体细胞染色体着丝粒具有CentO的同源序列, 同时也发现其所有着丝粒区域都包含栽培稻CRR的同源序列。这些结果对克隆稻属不同染色体组的着丝粒序列、研究不同染色体组间着丝粒的进化关系和稻属不同着丝粒DNA序列与功能之间的关系均具有重要意义。

关键词 [野生稻](#) [着丝粒](#) [细菌人工染色体](#) [荧光原位杂交](#)

分类号

Isolation and characterization of the centromeric BAC clones from different genomes in genus *Oryza*

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Abstract

<P>Centromeres play an important role in ensuring the correct segregation and transmission of chromosome during mitosis and meiosis in eukaryotes. In this research, we constructed five BAC libraries for diploid wild rice with different genomes. Together with the technique of colony blot hybridization and fluorescence in situ hybridization (FISH), centromere-related BAC clones were screened and characterized from different genomes. Meanwhile, co-hybridization was detected between these clones and the five genomes. The results from this study demonstrated that: (1) there were centromere-specific satellite repeat in *Oryza officinalis* (CC genome) and *O. brachyantha* (FF genome), respectively, and centromere-specific CRR-related sequence was found in *O. brachyantha*; (2) homology sequences of CentO and CRR of *O. sativa* (AA genome) were detected on all centromeres of *O. glaberrima* (AA genome), *O. punctata* (BB genome) and *O. australiensis* (EE genome); And (3) the two somatic chromosomes of *O. officinalis* comprised of homology sequences of CentO satellites as revealed FISH analysis probed with RCS2. Homology sequences of CRR of *O. sativa* were also detected on all centromeres of *O. officinalis*. The results provided a foundation toward cloning the centromeric sequences from different genomes of genus *Oryza*, studying centromere organization and evolution of different genome, analyzing the relationship between centromeric structure and function among different genome.</P>

Key words [wild rice](#) [centromere](#) [bacterial artificial chromosome \(BAC\)](#) [fluorescent in situ hybridization](#)

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