

长穗偃麦草中E和E1基因组高分子量麦谷蛋白基因启动子部分序列的进化分析 Evolution of Partial Promoter Region of HMW Glutenin Genes from E and E1 Genome of *Agropyron elongatum*

邓志勇, 张相岐 DENG Zhi-Yong, ZHANG Xiang-Qi

中国科学院遗传与发育生物学研究所植物细胞染色体工程国家重点实验室, 北京100101 The State Key Laboratory of Plant Cell and Chromosome Engineering, Institute of Genetics and Developmental Biology, Chinese Academy of Sciences, Beijing 100101, China

收稿日期 修回日期 网络版发布日期 接受日期

摘要

通过PCR克隆的方法, 获得了分别来自二倍体长穗偃麦草的E基因组和四倍体长穗偃麦草的E1基因组的4个高分子量麦谷蛋白亚基(HMW-GS)基因启动子的部分序列。序列分析表明, 它们之间的同源性较高, 两个x型亚基启动子序列之间只有1个碱基的差异, 而两个y型亚基启动子序列完全相同, x和y型亚基启动子序列之间的长度和部分碱基位点都有差异。推测四倍体长穗偃麦草中的E1基因组可能起源于二倍体的E基因组。与来自小麦族的A、B、D和G基因组部分亚基基因的启动子序列比较表明, 小麦族的这一区域在进化上是相当保守的, 不同基因组来源的序列同源性都在90%以上。经过对这些序列的聚类分析, 表明长穗偃麦草的y型HMW-GS基因与其他亚基基因的进化关系较远, 而x型亚基基因与一个来自小麦1B染色体的亚基基因关系最近。Abstract: The partial promoter regions of HMW glutenin subunit genes were cloned from the genomes E (in diploid *Agropyron elongatum*) and E1 (in tetraploid *Agropyron elongatum*) by PCR approach. There was only one nucleotide acid difference in the promoter sequences of x-type subunits between the two genomes; moreover, the promoter sequences of the two y-type subunits were completely identical. Although these promoter regions were very similar to each other, differences still existed in sequence size and the kind of nucleotide acid between the x-type and y-type subunits. It was speculated that the E1 genome in tetraploid *Agropyron elongatum* was probably originated from E genome in diploid species. The comparisons of these subunits with some of those from A, B, D and G genome of Triticeae demonstrated that the sequences of their partial promoter regions were conserved and shared a high homology more than 90%. The phylogenetic analysis based on the sequences in this region indicated that the y-type HMW glutenin subunits of *Agropyron elongatum* species were different from other subunits, whereas the x-type subunits of them were most closely related to that from the B genome.

关键词 [长穗偃麦草](#) [高分子量麦谷蛋白基因](#) [启动子](#) [进化](#) Key words [Agropyron elongatum](#) [HMW glutenin gene](#) [promoter](#) [evolution](#)

分类号

Abstract

Key words

DOI:

扩展功能

本文信息

- ▶ [Supporting info](#)
- ▶ [PDF\(0KB\)](#)
- ▶ [\[HTML全文\]\(0KB\)](#)
- ▶ [参考文献](#)

服务与反馈

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [加入引用管理器](#)
- ▶ [复制索引](#)
- ▶ [Email Alert](#)
- ▶ [文章反馈](#)
- ▶ [浏览反馈信息](#)

相关信息

- ▶ [本刊中 包含“长穗偃麦草”的 相关文章](#)
- ▶ [本文作者相关文章](#)

- [邓志勇](#)
- [张相岐 DENG Zhi-Yong](#)
- [ZHANG Xiang-Qi](#)

