

单核苷酸多态性在作物遗传及改良中的应用 Application of Single Nucleotide Polymorphism in Crop Genetics and Improvement

杜春芳^{1, 2}, 刘惠民³, 李润植¹, 李朋波², 任志强³ DU Chun-Fang^{1, 2}, LIU Hui-Min³, LI Run-Zhi¹, LI Peng-Bo², REN Zhi-Qiang³

1.山西农业大学农业生物工程研究中心, 太谷 030801; 2.山西省农业科学院棉花研究所, 运城 044000; 3.山西省农业科学院, 太原 030031 1.Center for Agricultural Biotechnology, Shanxi Agricultural University, Taigu 030801, China; 2.Cotton Research Institute, Shanxi Academy of Agricultural Sciences, Yuncheng 044000, China; 3.Shanxi Academy of Agricultural Sciences, Taiyuan 030031, China

收稿日期 修回日期 网络版发布日期 接受日期

摘要 单核苷酸多态性 (single nucleotide polymorphism, SNP) 是等位基因间序列差异最为普遍的类型, 可作为一种高通量的遗传标记。已建立了PCR扩增目标序列及其产物测序和电子SNP (eSNP) 等多种发现和检测SNP的方法。玉米和大豆等作物也已开展了SNP分析。一些栽培作物种质的多样性不断减少, 其结果使连锁不平衡 (linkage disequilibrium, LD) 增加, 这有利于目的基因座上SNP单元型 (haplotype) 与表型的相关性分析。SNP已在作物基因作图及其整合、分子标记辅助育种和功能基因组学等领域展示了广泛的应用价值。

Abstract: Single nucleotide polymorphism (SNP) is the most common type of sequence difference between alleles, which can be used as a kind of high-throughput genetic marker. Several different routes have been developed to discover and identify SNP. These include the direct sequencing of PCR amplicons, electronic SNP (eSNP) and so on. SNP assays have been made in many crop species such as maize and soybean. The elite germplasm of some crops have been narrowed in genetic diversity, increasing the amount of linkage disequilibrium (LD) present and facilitating the association of SNP haplotypes at candidate gene loci with phenotypes. SNP analysis has been broadly used in the field of plant gene mapping, integration of genetic and physical maps, DNA marker-assisted breeding and functional genomics.

关键词 [单核苷酸多态性 \(SNPs\)](#) [分子标记](#) [连锁不平衡](#) **Key words** [single nucleotide polymorphism \(SNP\)](#) [molecular marker](#) [linkage disequilibrium \(LD\)](#)

分类号

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“单核苷酸多态性 \(SNPs\)” 的相关文章](#)

▶ 本文作者相关文章

- [杜春芳](#)
- [刘惠民](#)
- [李润植](#)
- [李朋波](#)
- [任志强DU Chun-Fang](#)
- [LIU Hui-Min](#)
- [LI Run-Zhi](#)
- [LI Peng-Bo](#)

Abstract

Key words

DOI:

通讯作者