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专论与综述

质粒pCAMBIA1301的检测The Detection of Plasmid pCAMBIA1301 in Transgenic Rice by Arrayed Primer Extension

高秀丽1 ， 杨剑波2 ， 景奉香1 ， 赵建龙1GAO Xiu-Li,1 YANG Jian-Bo,2 JING Feng-Xiang,1 ZHAO Jian-Long1
1.中国科学院上海微系统与信息技术研究所,上海200050; 2.安徽省农业科学院 ,合肥 230031
1.Shanghai Institute of Microsystem and Information Technology Chinese Academy of Science1 Shanghai， 200050, China; 2.Academy of Agricultural Sciences of Anhui Province, Hefei,, 230031, China

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摘要 用引物延伸芯片法实现对转基因水稻中

生物芯片技术是生物技术和微制造技术的融合， 已广泛用于生命科学的研究及实践、医学科研及临床、药物设计、环境保护、农业、军事等各个领域。而基因芯片是生物芯片中的一种，是指将大量基因探针分子固定于支持物上，然后与标记的样品进行杂交，所以一次可对大量核酸分子进行检测分析，从而解决了传统核酸印迹杂交技术操作复杂、自动化程度低、检测目的分子数量少、效率低等不足。文章探讨了用基因芯片这一新的检测手段对转基因植物的初步检测，采用一种新的反应机制－引物延伸芯片法（arrayed primer extension），实现了样品扩增和杂交的一步化，而在传统的基因芯片检测中要需要两步来完成，从而为目前基因芯片中大片段样品的检测提供了一种可能性。

Abstract: Biochip technology which had emerged from the fusion of biotechnology and micro/nanofabrication technology at the end of 1980s has been widely used in life science ,medicine,clinical diagnosis,durg design,agricμLture,enviomentpretection and strategics. DNA microarray (also call gene chip,DNA chip),one kind of biochips,is small chip containing many oligonucleotide probe .It can hybridize with labelled sample which makes it possible to detect large numbers of oligonucleotides at one time.So DNA microarray can overcome the disadvantage of traditional hybridization technology such as complexity,low automatization,poor efficiency and amount of detcting molecμLes. This paper describes a new method to detect transgenic plant with gene chip.We have developed a novel arrayed-primer extension technique. It combines hybridization and PCR at one step, while two separate steps are needed in the ordinary DNA microarray, therefore our method provide a feasibility to detect long DNA fragment .

关键词 生物芯片 基因芯片 转基因植物检测 引物延伸芯片法 Key words biochip genechip transgenic plant detection arreyed primer extension
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