



棉花多重PCR技术及其对杂交棉纯度鉴定的初步研究

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Preliminary Study on Multiplex PCR Technique and Its Application in Hybrid Cotton Seed Purity Test

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摘要 选取在湘杂棉系列品种间表现出多态性稳定的部分SSR引物, 基于其扩增片段大小的不同来组合引物, 进行棉花多重PCR扩增。结果表明, 在与单一PCR扩增相同反应条件下, 仅根据扩增片段大小不同的原则, 可使80%的两重PCR组合获得正常扩增。利用两重PCR组合正常扩增的引物进行三重、四重PCR反应时, 均可获得正常扩增的产物, 在此基础上提出棉花上简化的多重PCR优化程序。并将多重PCR技术应用于杂交棉种子纯度检测, 清楚地鉴定出母本种子混杂和其它杂交棉种子的混杂, 从而为棉花杂交种的快速准确鉴定奠定了技术基础。

关键词: 棉花 SSR 多重PCR 纯度检测

Abstract: A series of stable polymorphism SSR primers in Xiangzhamian series cultivars were used to construct various primer combinations according to the difference of their amplified band's size for multiplex PCR amplification of cotton. Eighty percent of double PCR amplified normally based on the principle of amplified fragments size difference under the same conditions as their single PCR reactions. Besides, triplex and quadruple PCR were also amplified normally using primers of double PCR with good results. So we proposed a simplified protocol of multiplex PCR assay in cotton. The multiplex PCR technology was used to detect the purity of hybrid cotton seeds which clearly identified impurity and blend of female parent seeds and also other hybrid cotton seeds. It can be used as a reference for the rapid and accurate identification of cotton hybrids.

Keywords: cotton SSR multiplex PCR identification of seed purity

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