

用整合微流控芯片系统分析黄山松RAPD片段多态性 Analysis of Polymorphic RAPD Fragments in *P.Taiwanensis* Hayata Using an Integrated Microfluidic Chip-based System

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摘要 随机扩增多态DNA (randomly amplified polymorphic DNA, RAPD) 标记可快速提供连锁信息,特别是在针叶树单倍体的大配子体中RAPD基因型也能得以确定 [3]。在对多态性的RAPD片段进行分析时,传统的平板凝胶电泳分析法因人工操作,其有效的鉴别受到一定程度的限制,只能得到一些有关RAPD片段半定量信息。我们将整合微流控芯片系统作为一种新的工具运用于黄山松的多态性RAPD片段分析中。发现基于芯片的检测方法比琼脂糖凝胶电泳方法灵敏度更高,所需的样品量少得多,所需的时间仅为其1/4。并且能自动对DNA片段进行定性、定量分析。它是一种高效、灵敏、迅速、重复性好的检测新技术。

Abstract: Randomly amplified polymorphic DNA (RAPD) markers quickly provide linkage information [1~2], especially in conifers where haploid megagametophytes can be used for genotyping [3]. Traditionally use of slab gel electrophoresis results in qualitative data that can be manually manipulated to gain semiquantitative information about the polymorphic RAPD fragments. We have proposed the use of an integrated microfluidic chip-based system as a new tool in the analysis of polymorphic RAPD fragments. The chip-based method was found to be very sensitive, requiring much less sample and only quarter the time compared to the agarose gel method. The automated data analysis sizes and quantitates the DNA fragments, thus yielding a more thorough, reproducible, sensitive, and rapid analysis.

关键词 [整合微流控芯片系统](#) [随机扩增多态DNA \(RAPD\)](#) [黄山松](#) **Key words** [integrated microfluidic chip-based system](#) [randomly amplified polymorphic DNA \(RAPD\)](#) [P.Taiwanensis Hayata](#)

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