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农学—研究报告

从干种子中快速获取高质量DNA的高盐提取方法

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摘要:

为寻求一种从植物干种子中简单快速提取高质量基因组DNA的有效方法进行本研究。将种子打磨成粉，取100 mg粉末加入高盐提取液抽提基因组DNA。采用超微量分光光度计检测、PCR及酶切的方法检验DNA的得率和质量。从100 mg 7种常见作物种子粉末中可以得到619.67~1811.21 ng基因组DNA，A260/A280比值在1.87~2.07之间，其纯度和质量适合进行PCR及酶切分析。通过普通PCR方法分别对7种作物的特异性内源基因片段进行扩增，结果均能扩增到明显的目的条带。用EcoRV和HindIII两种核酸内切酶能对所得的DNA充分酶切。结果表明本方法能快速地从干种子中提取到高质量的DNA。

关键词: 干种子

A Method of Simple and Rapid Salt-extraction of High Quality Genomic DNA from Plant Seeds

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Abstract:

To find a new simple, fast and high quality genomic DNA extraction technique from dried seeds, this experiment was carried out. The seeds were ground to powder. 100 mg powder of seeds was put in an eppendorf tube and the genomic DNA was extracted by our method, respectively. The final eluate was detected by ultramicro UV/Vis spectrophotometer. The purity and quality of the genomic DNA extracted was confirmed by PCR and enzyme digestion analysis. 619.67 to 1811.21 ng of genomic DNA was extracted from 100 mg dried seeds for all individuals sampled, and the A260/A280 ratio of DNA samples was from 1.87 to 2.07. The purity and quality of the genomic DNA solution could be considered so high that it was sufficient for enzyme digestion and PCR analysis. The target bands all could be amplified from plant seeds by using their specific endogenesis gene primers. And the total DNA could be digested thoroughly by endonuclease such as EcoRV and HindIII. The results showed that genomic DNA was extracted successfully from dried seeds by this approach.

Keywords: dried seed

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