

林学—研究报告

血红鸡爪槭叶片总RNA提取方法的比较研究

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摘要:

血红鸡爪槭叶片中富含多糖、多酚物质, 严重影响了RNA提取纯度和质量。为了获得适宜血红鸡爪槭叶片总RNA提取的方法, 采用柱式植物RNAout法、TRIZOL法和改良CTAB法3种提取方法对其叶片总RNA提取效果进行比较分析。结果显示, 采用柱子法提取获得的总RNA产率最高, 但是有DNA污染; TRIZOL法提取的总RNA OD260 / OD280为1.65, 可能有多糖和酚类物质的污染, 并且产率最低; 改良CTAB法提取的总RNA纯度很高, OD260/OD280平均值在2.0左右, 产率在上述两种方法之间, 电泳图清晰, 而且改良CTAB法提取的总RNA, 经RT-PCR获得了清晰的特异性条带。表明改良CTAB法提取的总RNA纯度和产率高, 完全可以满足进一步分子生物学的需要, 是血红鸡爪槭叶片总RNA提取的适宜方法。

关键词: 血红鸡爪槭; 总RNA提取; RT-PCR

Comparison of Total RNA Isolation from the leaf of Acer palmatum

Abstract:

The polysaccharides and polyphenols in Acer palmatum leaves have seriously affected the purity and quality of RNA extraction. In order to obtain the appropriate method of total RNA extraction, three methods of column plant RNAout, TRIZOL reagent and improved CTAB were chosen for comparison analysis of total RNA extraction from Acer palmatum. Total RNA extracted by column plant RNAout method had the highest yield, but the worst quality due to the pollution of DNA. The worst quality of total RNA by TRIZOL method was due to the lowest yield and the pollution of carbohydrate and phenols. By use of the improved CTAB method, the ration value of OD260 / OD280 of total extracted RNA was 2.0, as well its clear electrophoresis pattern showing the good quality, high purity and higher yield. So the improved CTAB method is suitable for the total RNA isolation from the leaf of maple. The total RNA was used for RT-PCR and the specific band could be observed in agarose gel. These results demonstrate that the quality and purity of the RNA obtained by the improved CTAB method can meet the demands of molecular biology experiment. The improved CTAB method was the appropriate method of extraction the total RNA in Acer palmatum leaves.

Keywords: Acer palmatum 'Bloodgood' extraction of total RNA RT-PCR

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