

HiPure Tissue DNA Micro Kit (D3125)

----Stable and Reliable DNA extraction for Trace Samples

Introduction

In clinical and forensic research, some samples are trace amount and extremely precious. Such as a hair with hair roots, a needle punctured sample, a laser slice of a tumor, a drop of blood, etc. Extracting DNA from trace samples poses great challenges. The traditional extraction methods based on alcohol precipitation, phenol chloroform extraction, or salt precipitation, are not suitable for processing these trace amounts of samples because the efficiency of alcohol precipitation is low and the results are extremely unstable when recovering trace amounts of nucleic acids.

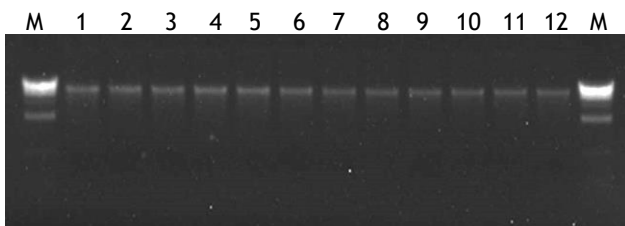
Magen's HiPure Tissue DNA Micro Kit uses silica gel column purification technology and is specifically designed for DNA extraction of trace samples, which can maximize the DNA production of trace samples. The kit can extract from as few as 10 cells. The obtained DNA can be directly used for PCR, fluorescence quantitative PCR, chip analysis, Southern hybridization, etc. The extraction process does not require the use of phenol chloroform extraction or alcohol precipitation, and the entire process only takes 20 minutes.

To verify the extraction effect of HiPure Tissue DNA Micro Kit, we used trace blood samples (0.5 μ l-10 μ l) and some forensic samples (hair, blood stains, cigarette butts, etc.) for extraction. After extraction, electrophoresis and PCR detection were performed. The results show that HiPure Tissue DNA Micro Kit can efficiently recover DNA from trace samples.

Experiment result

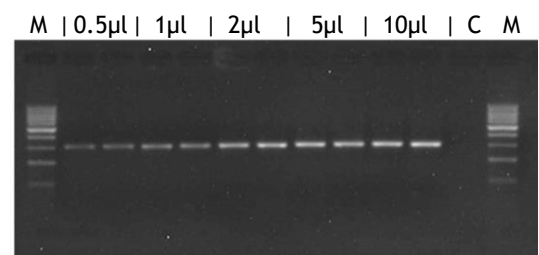
● Stability of trace blood samples

Take 12 10 μ l healthy anticoagulant whole blood samples and extract using HiPure Tissue DNA Micro Kit. After extraction, all DNA samples were analyzed by electrophoresis on 0.8% agarose gel. The results are as follows. From the figure, it can be seen that the blood DNA bands of the 12 samples are single, and the brightness is also similar, indicating that the reagent kit can stably extract DNA from trace amounts.



● PCR amplification effect of DNA in trace blood samples

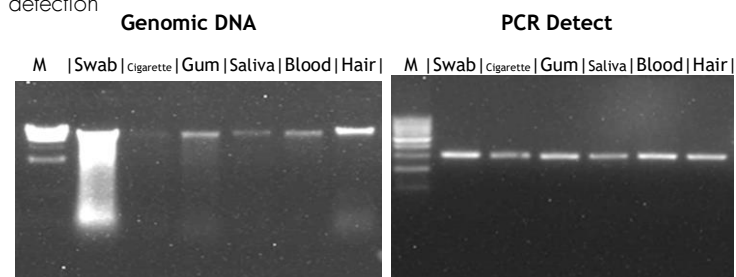
Take 0.5 μ l, 1 μ l, 2 μ l, 5 μ l, and 10 μ l healthy anticoagulant whole blood samples and extract them using HiPure Tissue DNA Micro Kit. After extraction, 50% of the DNA was used as the PCR template, and the b-actin genes were amplified in 35 cycles. Take 5 μ l PCR product samples, analyze on 2% agarose gel electrophoresis. The results are as follows. As shown in the figure, this kit can extract DNA from extremely small amounts of blood samples for PCR amplification.



M: 100bp DNA Marker.

● Extracting DNA from other trace samples

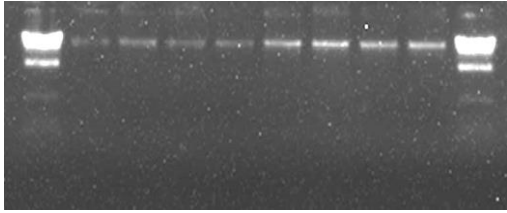
Take an oral swab, a cigarette end, 10mg of chewing gum, 10 μ l of saliva, blood stains, and three hairs with hair root, extract with HiPure Tissue DNA Micro Kit. After extraction, 50% of DNA samples were analyzed by electrophoresis on 0.8% agarose gel. The results are as follows. Take 50% of DNA as the PCR template and amplify the b-actin gene for 35 cycles. Take 5 μ l PCR product and analyze on 2% agarose gel electrophoresis. The results are as follows. As shown in the figure, the DNA obtained by this method can be directly used for PCR detection



● Carrier RNA improves the recovery efficiency

Take 4 5 μ l healthy anticoagulant whole blood samples, extract using HiPure Tissue DNA Micro Kit. During the extraction, one sample was added Carrier RNA while the other was not to compare the effectiveness of Carrier RNA. After extraction, all DNA samples were analyzed by electrophoresis on 0.8% agarose gel. The results are as follows. As shown in the figure, adding Carrier RNA can significantly improve DNA recovery.

M | -Carrier RNA | +Carrier RNA | M



- Recovery efficiency of DNA Marker

Take 5 μ l DNA Marker (~200ng), diluted with serum to 250 μ l, and then extract by HiPure Tissue DNA Micro Kit. The original DNA Marker and all the recovered products were analyzed by 1.5% agarose gel electrophoresis. As shown in the figure, this kit can efficiently recover trace DNA fragments from serum.

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