Genomic DNA Extraction and Purification Kit

#Cat: NB-26-01726 Size: 100Tests

Introduction

This kit is suitable for the extraction of DNA from fresh or frozen whole blood treated with anticoagulant. The special Red Blood Cell lysis solution can efficiently extract DNA from the blood cells. The purified DNAhas a typical ratio of the OD260/280 between 1.7 to 1.9, and the recovered DNA size can be up to 60 kb.The resulting product can be used directly as a template for PCR, hybridization, etc. The kit will work with a 48 well round bottom plate if a special magnetic frame is used. The kit can also beused with a variety of automatic nucleic acid extraction instruments or workstation.

Materials Provided

- Si-Mag magnetic beads 10 ml
- Proteinase K solution 3ml
- Red Blood Cell Lysis solution 20 ml
- Wash solution 1 70 ml
- Wash solution 2 15 ml (Add 60 ml of 100% ethanol before use)
- Wash solution 3 15 ml (Add 60 ml of 100% ethanol before use)
- Elution Buffer 10 ml

Materials needed but not provided with the kit

- 100% Ethanol
- Isopropanol
- Si-Mag Magnet (sold separately)

Application

This kit provides a simple, rapid and efficient method for the recovery and purification of DNA directly from Agarose gel (100 bp to 50 kb) with typical recovery efficiency up to 85%.

Precautions

1. Avoid freeze/thaw cycles and centrifugation which could damage the beads.
2. Proteinase K solution should be stored at -20°C, avoid frequent freeze/thaw cycles.
3. Bring frozen samples to room temperature before extraction.
4. Vortex samples for about 10 seconds before adding magnetic beads.
5. Vortex beads and mix them well with DNA to ensure best performance.
6. Elute DNA from the beads completely.

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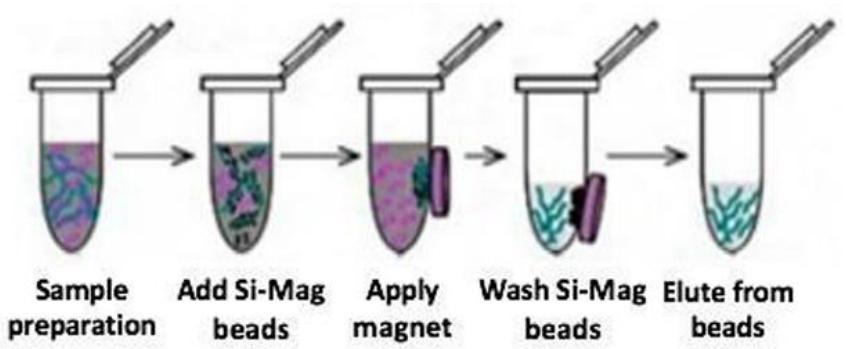
Storage

Magnetic beads should be stored at 2-8°C, the Proteinase K needs to be stored at -20°C, but other kitreagents need to be stored at room temperature. Avoid repeated freeze-thaw cycles.

Principle of Assay



Procedure for purification of genomic DNA from blood

1. Preparation of sample. Add 200µl of blood sample (or diluted with elution solution to make 200µl volume), 200µl of Blood lysis solution, and 30µl of Proteinase K solution into a clean Eppendorf tube. Incubate for 15 min at 58°C and vortex the mixture for 30 seconds every 3 min. during the incubation. Cool to room temperature and proceed to next step.

2. Add 100 µl of magnetic beads to the tube.

3. Add 300 µl of isopropanol to the tube.

4. Mix well, shake and incubate for 5-10 min at room temperature. Place Eppendorf tube onto the Si- Mag magnet rack for 20 seconds. Make sure the beads are collected at the bottom of the tube.

5. Remove supernatant by holding the magnet rack upside down or by pipetting.

6. Wash the beads with 700µL of wash solution 1. Apply magnet for 20 second then remove supernatant as in Step 5.

7. Wash the beads with 700µL of wash solution 2. Apply magnet and remove supernatant as in Step 5.

8. Wash the beads with 700µL of wash solution 3. Apply magnet and remove supernatant as in Step 5.

9. Dry the beads at 55°C for 3-4 min, leaving the tube open. Do not over-dry the beads.

10. Elute DNA from beads with 100-200µl of elution buffer; incubate at 60°C for 2 min and then vortex at full speed for 30 seconds. Wait for 8 min after the incubation and vortex again for 30 seconds.

11. Remove beads by using magnet rack, pipette DNA out and transfer to a clean tube.

12. Store purified DNA at -20°C for long-term storage.