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Blood Genomic DNA Extraction Kit

rev 07/21

(Catalog# K1443-100; 100 tests; Storage at Multiple Temperatures)

I. Introduction:

Blood Genomic DNA Extraction 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 DNA has a typical ratio of the $OD_{260/280}$ 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 be used with a variety of automatic nucleic acid extraction instruments or workstation.

II. Applications

- Extraction of DNA from fresh or frozen whole blood treated with anticoagulant. Purified DNA can be used as a template for PCR, hybridization, etc.

III. Sample Type:

- Blood

IV. Kit Contents:

Component	K1443-100	Part Number
Magnetic Beads	1.5 ml	K1443-100-1
Proteinase K Solution	2 ml	K1443-100-2
Blood Cells Lysis Solution	20 ml	K1443-100-3
Wash Solution (2X)	38 ml	K1443-100-4
Elution Buffer	10 ml	K1443-100-5

Add 38 mL of Isopropanol to Wash Solution (K1443-100-4) before use.

V. User Supplied Reagents and Equipment:

- Magnetic racks compatible with vials used
- DNase and RNase free water
- 80% Ethanol
- Isopropanol (ACS grade)
- **Wash Solution:** *Add 38 mL of Isopropanol to Wash Solution (K1443-100-4) before use

VI. Storage Conditions and Reagent Preparation:

Magnetic beads should be stored at 2-8 °C. All kit reagents need to be stored at 4 °C except Proteinase K Solution which should be stored at -20 °C. Lysis solution may turn cloudy if stored in the cold room and to clear it up place the bottle in a water bath at 37 °C.

VII. Assay Protocol:

1. **Preparation of sample:** Add 200 µl of blood sample (or diluted with elution solution to make 200 µl volume), 200 µl of Blood lysis solution, and 20 µl of Proteinase K solution into a clean Eppendorf tube. Incubate for 15 min at 58 °C and vortex the mixture for 30 sec every 3 min. during the incubation. Cool to room temperature (RT) and proceed to next step.
2. Add 15 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 RT. Place the Eppendorf tube onto the magnet rack for 20 sec. Make sure the beads are collected at the bottom of the tube.
5. Remove the supernatant by holding the magnet rack upside down or by pipetting.
6. Wash the beads with 700 µl of wash solution 1. Apply magnet for 20 sec then remove supernatant as in Step 5.
7. Wash the beads with 700 µl of 80% Ethanol solution. Apply magnet and remove supernatant as in Step 5.
8. Dry the beads at 55 °C for 3-4 min, leaving the tube open. Do not over-dry the beads.
9. Elute DNA from beads with 100-200 µl of elution buffer. Incubate at 60 °C for 2 min and then vortex at full speed for 30 sec. Wait for 8 min after the incubation and vortex again for 30 sec.
10. Remove the beads by using a magnet rack, pipette DNA out and transfer to a clean tube.
11. Store the purified DNA at -20 °C for long-term storage.

VIII. Related Products:

- Cell & tissue genomic DNA extraction and purification kit (# K1442)
- Mitochondrial DNA Isolation Kit (Cat# K280)
- Whole Blood DNA Isolation Kit (Cat# K528)
- Agarose gel DNA extraction kit (Cat# K1441)
- Plasmid DNA extraction kit (Cat# K1445)

FOR RESEARCH USE ONLY! Not to be used on humans.